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PUBLIC HEALTH SERVICE SUPPORT OF CARDIOVASCULAR RESEARCH, TRAINING FELLOWSHIPS, AND COMMUNITY PROGRAMS

National Heart and Lung Institute
Bethesda, Maryland

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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

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TABLE OF CONTENTS

	Page
TO THE READER	iv
RESEARCH PROJECT GRANTS	1
Arrangement of Material and Grant Number Key	2
Table One	3
Totals and Institution Index	111
TRAINING GRANTS	121
Arrangement of Material and Grant Number Key	122
Table Two	123
Totals and Institution Index	153
FELLOWSHIP AWARDS	159
Arrangement of Material and Grant Number Key	160
Table Three	161
Totals and Institution Index	189
COMMUNITY PROGRAMS	195
Arrangement of Material	196
Table Four	197
SUMMARY OF TOTALS	199
GRANTEE INDEX	205
MAP—State and Territory Distribution of Grants and Awards	227
MAP—World Distribution of Grants and Awards	228
GRANT STAFF INDEX	*Inside Back Cover*

TO THE READER

The National Heart Institute has served since 1948, not only as a center for basic cardiovascular research but also as the administrative center for the cardiovascular grants and fellowships program supported by the Public Health Service. The purpose of this program is to expand existing cardiovascular research and training activities, to foster research and training in relatively unexplored areas, and to augment support from private institutions, foundations, philanthropies, and similar sources. Through grants and fellowships awarded and administered under this program, the bulk of the cardiovascular research and training supported by the Public Health Service is conducted at universities, hospitals, and similar institutions all over this country and also abroad. The National Heart Institute, through the Heart Disease Control Program, cooperates with the Bureau of State Services to aid States and Territories in establishing community heart programs. These are assisted through grants-in-aid, professional personnel, consultation, and a wide variety of technical services provided by this program. Among the State heart disease control activities fostered and aided by the Heart Disease Control Program are training and educational programs, casefinding and epidemiological studies, rheumatic fever programs, and the establishment of diagnostic clinics and rehabilitation centers.

RALPH E. KNUTTI, M.D.
Director, National Heart Institute

research project grants

GRANTS IN SUPPORT OF RESEARCH ACTIVITIES CONDUCTED OUTSIDE THE PUBLIC HEALTH SERVICE

ARRANGEMENT OF MATERIAL AND GRANT NUMBER KEY—TABLE ONE

Material in this table is arranged alphabetically under three main divisions: (1) States, (2) Territories, and (3) Foreign Countries.

Under the above three main divisions, the material is arranged alphabetically by *city*, then alphabetically by *institution*.

Under each institution, material is arranged alphabetically by the name of the principal investigator. Only the principal investigator is named.

Following the primary *grant number*, letters and numerals indicate further detail concerning the grant. The letters have denotive meanings as follows: A=Small Grant receiving special action; C=Continuation Grant; R=Revised Application; and S=Supplementary Grant. When a numeral follows any such suffix letter it indicates the ordinal number of the action. Thus, C3 means third *continuation* year, R2 means second *revision*, and S1 means first *supplement* to the grant as specified by the preceding symbols.

Grantee	Project Title	Grant No.	Amount
ALABAMA			
AUBURN			
Auburn University			
Salmon, W. D	Vascular lesions of choline-methionine deficiency	H–2615C4	$11, 247
Institution total, 1 grant, $11, 247			
BIRMINGHAM			
Alabama, University of			
Bargeron, Lionel M	Diagnosis of congenital heart disease in infants	H–2602C3	12, 305
Berson, Robert C	To establish and operate a clinical cardiovascular center	H–6353	315, 975
Bentley, Herschel P	Role of lipids in blood thromboplastin formation	H–5430	11, 212
Branscomb, Ben V	Dynamics of air flow in early heart and lung disease	H–5646	11, 661
Edwards, W. Sterling	Prefabricated tubular nylon grafts	H–1987C6	17, 250
Harrison, Tinsley R	Effects of exercise in patients with angina pectoris	H–5080C1	15, 000
Hunt, Thomas E	Study of mast cells and basophil leukocytes	H–2456C4	5, 902
Jones, William B	Variations in ventricular stroke volume and velocity	H–5257C1	6, 555
Klip, Willem	Investigations of the velocity of pressure waves	H–5379C1	14, 030
Kornel, Ludwig	Steroid metabolism in hypertension	H–4464A	2, 300
Kornel, Ludwig	----do	H–4751	23, 575
Lupton, C. H., Jr	Application of electron microscopy to renal anatomy	H–1725C6	24, 955
Lyons, Champ	Study of surgical cardiovascular problems	H–3109C4	27, 600
Lyons, Champ	Joint study—diagnosis of operable cerebral ischemia	H–4943C1	9, 487
McManus, J. F. A	Aortic cusp lipids and atherosclerosis	H–2797C4	23, 147
Perkins, Rex	Altered dynamics of acute mitral insufficiency	H–3972C2	5, 000
Perkins, Rex	Apicoaortic shunt, physiologic and technical study	H–5884	5, 000
Reeves, T. J	Pressure, flow and ventricular performance	H–3684C2	20, 240
Shepard, Richard B	Effects of grafts on energy losses in large arteries	H–6167	20, 100
Thomas, Henry D	Functional evaluation of surgical heart disease	H–5332C1	9, 890
Institution total, 20 grants, $581, 184			
STATE TOTAL, 21 grants			592, 431
ALASKA (None)			
ARIZONA			
TEMPE			
Arizona State University			
Patterson, Robert A	The site and mode of action of selected animal venoms	H–4923C1	11, 500
Institution total, 1 grant, $11, 500			

Grantee	Project Title	Grant No.	Amount
ARIZONA—Continued			
TUCSON			
Basic Health Research Institute			
Gelber, Beatrice	Aging or its analog in paramecium aurelia	H–5970	$20, 000
Gelber, Beatrice	----do	H–5970S1	3, 115
Institution total 2 grants, $23, 115			
STATE TOTAL, 3 grants			34, 615
ARKANSAS			
FAYETTEVILLE			
Arkansas, University of			
Ganslen, Richard V	Drug effect—aerobic work capacity of normal subject	H–6364	2, 515
Smith, Alan G	The alkaloids of amianthium muscaetoxicum gray	H–4060C2	8, 464
Institution total, 2 grants, $10,979			
LITTLE ROCK			
Arkansas, University of			
Ebert, Richard V	Ventilation in pulmonary emphysema	H–2193C5	6, 389
Ebert, Richard V	Lung structure and function in pulmonary emphysema	H–4031C2	25, 607
Hara, Masauki	Experimental chronic pulmonary emphysema	H–3213C3	13, 225
Nettlez, John B	Reversible kidney lesions in pregnancy toxemias	H–4975C1	5, 000
Nettles, John B	Meperidine distribution in parturient and neonate	H–5934R1	16, 649
Norman, Tom D	The pathogenesis of cardiac hypertrophy	H–6432	6, 000
Ross, S. W	Factors concerned with platelet thrombus formation	H–4611C1	13, 622
Seager, Lloyd D	Circulatory effects of breathing chilled air	H–2741C3S1	3, 222
Seager, Lloyd D	Responses of the pulmonary and systemic vessels	H–3383C3	8, 625
Institution total, 9 grants, $98,339			
STATE TOTAL, 11 grants			109, 318
CALIFORNIA			
BERKELEY			
California Department of Public Health			
Breslow, Lester	Human population laboratory for epidemiologic studies	H–5961	20, 954
Institution total, 1 grant, $20,954			

Grantee	Project Title	Grant No.	Amount
CALIFORNIA—Continued			
BERKELEY—Continued			
California, University of			
Cason, James	Branched-chain acids in foodstuffs	H-5515	$20, 700
Chaikoff, Israel L	Chemical studies in experimental arteriosclerosis	H-109C11	54, 293
Clarke, James S	Effects of perihepatic vascular shunts	H-3066C4	21, 213
Gofman, John W	Lipoproteins and atherosclerosis	H-2029C6	42, 235
Goodwin, Sidney M	Chemistry of natural products	H-4922C1	20, 000
Jenkins, W. T	Purification and characterization of transaminases	H-4417C2	9, 361
Jones, Hardin B	Role of the circulation in homeostatic mechanisms	H-2838C3	25, 000
Lawrence, John H	Chemistry of serum lipoproteins	H-1882C6	19, 018
Linde, Leonard M	Developmental study of cyanotic heart disease	H-4259C1S1	230
Macey, Robert I	Active transport through biological membranes	H-6063	9, 465
Okey, Ruth	Composition of food fat and cholesterol absorption	H-2152C5	8, 841
Pace, Nello	Chemoreceptor function and altitude adaptation	H-4981C1	18, 026
Wylie, Edwin J	Extracranial arterial occlusion—joint study	H-4850C1	33, 850
Institution total, 13 grants, $282,232			
BURBANK			
St. Joseph Hospital			
Salisbury, Peter F	Patterns in experimental circulatory dysfunctions	H-4227C2	20, 700
Salisbury, Peter F	Cardiac energy transformation and oxygen availability	H-4272C1	20, 000
Salisbury, Peter F	Permanent supplementation of renal function	H-4273C1	11, 500
Institution total, 3 grants, $52,200			
CULVER CITY			
Western Biological Laboratories, Inc.			
Ershoff, Benjamin H	Effects of pectin feeding on atherosclerosis	H-4510C1	13, 368
Ershoff, Benjamin H	Effects of antioxidants on aging and life span	H-5469R1	13, 947
Institution total, 2 grants, $27,315			
DAVIS			
California, University of			
Asmundson, Vigfus S	Heritability of cardiovascular adaptations to stress	H-2566C4	13, 351
Rhode, Edward A	Ventricular volume relationships in domestic animals	H-5622	28, 750
Smith, Arthur H	Adaptation of animals to climatic stress	H-1920C6	8, 375
Smith, Arthur H	——do	H-1920C6S1	5, 372
Tyler, Walter S	Investigations of chronic pulmonary emphysema	H-6101	100, 000
Institution total, 5 grants, $155,848			

Grantee	Project Title	Grant No.	Amount
CALIFORNIA—Continued			
DOWNEY			
Rancho Los Amigos Hospital			
Reiff, Theodore R	Colloid osmotic homeostasis in humans	H–5319C1	$12, 291
Institution total, 1 grant, $12,291			
Attending Staff Association of Rancho Los Amigos Hospital, Inc.			
Iseri, Lloyd T	Cardiac failure after the age of 65 years	H–3987C2	14, 780
Institution total, 1 grant, $14,780.			
DUARTE			
City of Hope Medical Center			
Beutler, Ernest	Enzymatic oxidation of red cell tpnh	H–5292C1	13, 034
Beutler, Ernest	Effect of chemical alteration of sickle hemoglobin	H–5313R1	19, 421
Beutler, Ernest	The mechanism and the control of iron absorption	H–5618	17, 250
Solomon, Robert D	Vanadyl salts on experimental atherosclerosis	H–5966	16, 848
Institution total, 4 grants, $66,553.			
LA JOLLA			
Scripps Clinic and Research Foundation			
Baronofsky, Ivan D	Surgical treatment of coronary heart disease	H–5730	21, 045
Bartlett, Grant R	Metabolism of the red blood cell	H–1071C9	29, 440
Dimond, E. G	Human atherosclerosis, recognition and prevention	H–5575	23, 000
Froeb, Herman F	Airway resistance under CO_2 stimulation	H–5464	8, 987
Institution total, 4 grants, $82,472.			
LOMA LINDA			
College of Medical Evangelists			
Collier, Clarence R	Effects of hypoxia and hypercapnia	H–3822C3	15, 700
Pearson, Robert B	Stabilization reactions in heart rhythm	H–4953C1	9, 678
Institution total, 2 grants, $25,378.			
LOS ANGELES			
California, University of			
Abbott, Bernard C	Comparative cardiovascular physiology	H–4019C2	15, 000
Adams, Forrest H	Blood pressure measurements in infants and children	H–5810	10, 000
Agress, Clarence M	A correlation of heart function and vibration spectra	H–3960C2	11, 500
Agress, Clarence M	Use of heart-lung machine in cardiogenic shock	H–5247C1	15, 000
Alfin-Slater, Rosly	Sex hormones and cholesterol metabolism	H–4918C1	16, 330

Grantee	Project Title	Grant No.	Amount
CALIFORNIA—Continued			
LOS ANGELES—Continued			
California, University of—Continued			
Assali, Nicholas S	Studies on toxemia of pregnancy	H-1755C7	$29, 181
Bassett, Samuel H	Studies on altered renal mechanisms in uremia	H-1004C9	22, 882
Bevan, John A	Sympathomimetic amines and vascular smooth muscle	H-4301C1	10, 000
Cannon, Jack A	Direct surgery of arteriosclerosis	H-1787C6	37, 017
Chapman, John M	The Los Angeles heart study	H-4087C2	19. 923
Clark, William G	Cardiovascular system—metabolism of catecholamines	H-5239	40, 068
Dayton, Seymour	Metabolism of arterial tissue in atherosclerosis	H-3734C2	8, 481
Dayton, Seymour	Metabolic effects of unsaturated fat feeding	H-4900C1	15, 180
Florsheim, Warner H	Control of lipemia by hepatic protein synthesis	H-2013C6	11, 500
Griffith, Wendell H	Analysis of lipids in atheromas and other deposits	H-4120C1S1	13, 023
Griffith, Wendell H	do	H-4120C1S2	620
Griffith, Wendell H	do	H-4120C2	20, 007
Griffith, Wendell H	do	H-4120C2S2	1, 487
Guze, Lucien B	Immunologic response in streptococcal infection	H-4199C1	11, 056
Hemingway, Allan	Effect of pneumothorax on plasma phospholipids	H-1243C8	11, 208
Kolin, Alexander	Regional blood flow	H-3092C1	23, 495
Kurnick, N. B	Mechanism of renal hypertrophy	H-1880C5S1	11, 258
Kurnick, N. B	do	H-1880C6	41, 840
Linde, Leonard M	Lung function in congenital heart disease	H-5125A	1, 416
Linde, Leonard M	Developmental study of cyanotic heart disease	H-4259C2	3, 194
Longmire, William P	Changes resulting from the use of pump-oxygenators	H-2812C4	18, 128
Maxwell, Morton H	Unilateral renal hypertension	H-3670C3	23, 000
Maxwell, Morton H	Cooperative study of renovascular hypertension	H-6354	49, 032
Mommaerts, Wilfried	Chemical physiology and biophysics of the heart	H-3067C3	50, 250
Mulder, Donald G	Extracranial arterial occlusion—joint study	H-5054C1	15, 065
Murray, John F	Intrahepatic circulation and blood volume	H-5459	11, 517
Pease, Daniel C	Electron microscopy of ultrathin tissue sections	H-1770C9	28, 059
Simmons, Daniel H	Hemodynamic effects of acid-base disturbances	H-5137C1	14, 817
Sonnenschein, Ralph	Nervous control of peripheral circulation	H-5157	25, 300
Tishkoff, Garson H	Chemistry and metabolism of the blood clotting factor	H-6021	23, 860
Valentine, William	Biochemical, physiologic studies of blood cells	H-1069C8	81, 462
Valentine, William	do	H-1069C8S1	10, 818
Institution total, 37 grants, $751,974			
Cedars of Lebanon Hospital			
Caren, Raymond	Pancreatic alpha-cell function and lipid metabolism	H-2715C4	13, 947
Carton, Charles A	Small vessel anastomosis—cerebral circulation	H-6661	11, 234
Corday, Eliot	Vasomotor control of the cerebral circulation	H-4685R1	17, 250

Grantee	Project Title	Grant No.	Amount
CALIFORNIA—Continued			
LOS ANGELES—Continued			
Cedars of Lebanon Hospital—Continued			
Corday, Eliot	Regional blood flow of the vital organs in shock	H-6265	$11, 500
Engelberg, Hyman	Endogenous lipemia clearing activity	H-2164C5	12, 880
Fields, Josh	Functional architecture of the ventricular septum	H-5939	44, 736
Lanchantin, Gerard	Immunochemical studies of human prothrombin	H-4842C1	9, 775
McBroom, Fletcher P	Effect of hormone on intraocular coronary transplants	H-5381C1	7, 510
McBroom, Fletcher P	----do	H-5381C1S1	11, 672
Prinzmetal, Myron	Rhythmic and arrhythmic ventricular motion	H-1267C8	33, 350
Rosenfeld, Sheldon	Physiological studies on the isolated perfused kidney	H-4868C1	9, 976
Schapiro, Shawn	The nervous system and experimental atherosclerosis	H-4434C1	6, 900
Sellers, Alvin L	Circulatory, functional, metabolic studies of the kidney	H-531C12	34, 500
Institution total, 13 grants, $225,230.			
Children's Hospital Society of Los Angeles			
Bergren, William R	Minor hemoglobin components in thalassemia	H-5917	19, 422
Kurtz, Harrison M	The role of complement in experimental kidney disease	H-3277C3	11, 087
Sturgeon, Phillip	Hemosiderin and ferritin metabolism	H-5420	29, 377
Institution total, 3 grants, $59,886.			
College of Medical Evangelists			
Crane, Milton G	Steroid metabolism in hypertension	H-4745C1	23, 000
Crane, Milton G	Exchangeable sodium and potassium in hypertension	H-5758	11, 500
Hackney, Jack D	CO_2 transfer and body stores	H-4023C2	5, 750
Hirst, Albert E., Jr	Comparison of atherosclerosis in Thailand, India, USA	H-5610	7, 613
Hon, Edward H	Fetal energy and its relationship to labor	H-5454	26, 981
Hon, Edward H	----do	H-5454S1	25, 679
Quilligan, J. J	Study of vaccines for respiratory illness in children	H-5998	35, 601
Russell, Findlay	Cardiovascular effects of venoms of certain animals	H-3443C2	9, 045
Smith, Louis L	Study of vascular reactivity in surgery	H-4639C1	20, 000
Sobin, Sidney S	Volume elasticity studies of the pulmonary artery	H-3614C3	12, 585
Sobin, Sidney S	Postnatal development of the coronary circulation	H-5002C1	9, 578
Institution total, 11 grants, $187,332			
Immaculate Heart College			
Geller, Leo	The synthesis of quinolizidine derivatives	H-4625C1	8, 165
Institution total, 1 grant, $8,165			

Grantee	Project Title	Grant No.	Amount
CALIFORNIA—Continued			
LOS ANGELES—Continued			
Los Angeles County Hospital			
Starr, Paul	Physiologic analysis of action of dextro-thyroxine	H-5134S1	$10,789
Starr, Paul	----do	H-5134C1	22,789
Starr, Paul	Dextro- versus levo-thyroxine medication in heart disease	H-5562R1	10,000
Institution total, 3 grants, $43,578			
Southern California, University of			
Alexander, Natalie	Baroreceptor adaptation in experimental hypertension	H-5543	8,033
Blankenhorn, David	Distribution and manner of growth of atheromas	H-3763C2	14,200
Blankenhorn, David	The size of chylomicrons	H-4699C1	15,000
Butt, Edward M	Heavy metal storage in organs	H-5771	22,696
Drury, Douglas R	Mechanisms causing hypertension and heart failure	H-683C10	24,322
Harvey, Herman M	Stress and emotionality in experimental atherosclerosis	H-54C13	16,100
Henstell, Henry H	Study of biochemical behavior of serum globulins	H-4194C1	16,629
Hungerford, Gerald	Cardiovascular aspects of magnesium deficiency	H-2668C4	12,132
Hyman, Chester	Factors influencing capillary permeability and filtration	H-4849C1	9,200
Kay, Jerome H	Importance of pulmonary blood flow to lung function	H-352C10	15,000
Marmorston, Jessie	Basic and applied studies in atherosclerosis	H-5885	25,000
Marmorston, Jessie	----do	H-4600C1S1	34,500
Martin, Helen E	Radioisotopic magnesium studies in heart disease	H-4600C1S2	76,667
Marx, Walter	Tissue heparin, the thyroid and atherosclerosis	H-4551C1	12,133
Morehouse, M. G	Heart lipid variations under choline restriction	H-1596C7	16,593
Patek, Paul R	Role of reticuloendothelial system in atherosclerosis	H-5014C1	6,900
Paule, Wendelin J	Electron microscopy of pre- and post-natal arteries	H-4867C1	21,915
Rapaport, Samuel I	Studies of PTA, HF, and AP	H-4988C1	7,477
Rapaport, Samuel I	Relationship between coagulability and thrombosis	H-5590	9,703
Reilly, Emmett B	Coagulation properties of pancreatic extracts	H-6128	44,376
Reynolds, Telfer B	Hepatic blood pressure and flow in cirrhosis	H-5359C1	16,572
Roberts, Carmel M	Radioactive ion fluxes in rat atrium	H-1718C6	10,652
Roberts, Carmel M	----do	H-4338C1	8,013
Samuels, Peter B	Blood vessel anastomosis by means of metal clips	H-4338C1S1	2,913
Saunders, Paul R	Contractile, electrical, and ionic effects of ouabain	H-3981C2	8,053
Thomas, Lyell Jay	The mechanism of action of calcium in heart muscle	H-4890C1	10,138
Warnhoff, Edgar W	Hypotensive principles of ceanothus species	H-2298C4	9,200
Webb, John L	The mechanisms of induction of fibrillation	H-5762	12,786
Webb, John L	----do	H-4336C1	9,722
Weil, Max H	Shock associated with overwhelming infection	H-4336C1S1	4,495
		H-5570	22,678

Grantee	Project Title	Grant No.	Amount
CALIFORNIA—Continued			
LOS ANGELES—Continued			
Southern California, University of—Continued			
Yang, William C	Mitochondrial changes during cardiac hypoxia	H–4346C1	$6, 659
Yang, William C	----do	H–4346C1S1	1, 815
Institution total, 33 grants, $532,272			
NORTHRIDGE			
San Fernando Valley State College Foundation			
Schapiro, Shawn	Nervous system and experimental atherosclerosis	H–6829	5, 508
Institution total, 1 grant, $5,508			
OAKLAND			
Children's Hospital of the East Bay			
Hansen, Arild E	Composition and nature of growth of vascular system	H–5658	38, 337
Institution total, 1 grant, $38,337			
Highland Alameda County Hospital			
Kinsell, Laurance W	Studies in lipid metabolism	H–955C9	32, 200
Institution total, 1 grant, $32,200			
PALO ALTO			
Palo Alto Medical Research Foundation			
Ebnother, Carl L	Evaluation of plasmin therapy in myocardial infarct	H–6256	26, 266
Fredell, Erling W	Development of improved artificial kidney	H–4649C1	14, 779
Hecker, Sydney P	Plasmin therapy in acute cerebral thrombosis	H–6071	9, 602
Sirota, Jonas Henry	Action of mercurial diuretics	H–2652C4	15, 000
Institution total, 4 grants, $65,647			
PASADENA			
California Institute of Technology			
Borsook, Henry	The biological synthesis of protein	H–1624C9	44, 327
Owen, Ray D	Experimental biology	H–3103C4	52, 423
Pauling, Linus	Molecular chemistry applied to biology and medicine	H–3136C3	49, 999
Schroeder, Walter A	Sequence of Amino acid residues in human hemoglobin	H–2558C4	42, 722
Vinograd, Jerome	Ultracentrifugal studies of biologic macromolecules	H–3394C2S1	10, 370
Vinograd, Jerome	----do	H–3394C3	47, 019
Institutional total, 6 grants, $246,860			

Grantee	Project Title	Grant No.	Amount
CALIFORNIA—Continued			
PASADENA—Continued			
Institute of Medical Research—Huntington Memorial Hospital			
Pudenz, Robert H	Treatment of central nervous system vascular disease	H–4351C1	$9, 085
Thienes, Clinton H	Adrenal tolerance to nicotine	H–5670	12, 552
Institution total, 2 grants, $21,637			
SAN FRANCISCO			
California, University of			
Adams, John E	Cerebral circulation time and cerebral blood flow	H–4275C2	11, 500
Botts, Jean	Enzyme kinetics and muscle action	H–6356	10, 350
Brodie, Donald C	Mechanism of action of epinephrine on smooth muscle	H–4042C3	5, 671
Brodie, Donald C	----do	H–4042C3S1	5, 580
Brown, Ellen	Blood volume and venous distensibility	H–1271C8	13, 947
Comroe, Julius H., Jr	Cardiovascular research center	H–6285	498, 835
Comroe, Julius H., Jr	Cardiopulmonary physiology	H–4029C2	59, 906
Comroe, Julius H., Jr	Cardiovascular physiology and biochemistry	H–4247C2	30, 000
Craig, John C	Biological ester formation by hemiacetal oxidation	H–5881	22, 923
Edelman, Isidore S	Biophysical and biochemical components in ion transport	H–1441C8	10, 628
Fudenberg, Hugh	Isoagglutinin size—relation to ABO hemolytic disease	H–5997	42, 324
Ganong, William F	Factors regulating pressor amine secretion	H–2780C4	22, 770
Greenberg, David M	Intermediary metabolism in cardiovascular disease	H–3074C4	21, 850
Harris, Robert E	The pathogenesis of essential hypertension	H–754C8S1	1, 331
Havel, Richard J	Lipid transport and metabolism	H–2554C4	11, 356
Masouredis, S. P	Reaction between I^{131} isoantibodies and red cells	H–5071C1S1	1, 717
Masouredis, S. P	----do	H–5071C2	17, 623
Masouredis, S. P	----do	H–5071C2S1	12, 433
Meyers, Frederick H	Biotransformation of tritiated digitoxin	H–5072C1	5, 428
Moon, Henry D	Histochemistry of blood vessels	H–1542C7	15, 950
Morales, Manuel F	Molecular aspects of muscle action	H–6085	6, 600
Morales, Manuel F	----do	H–6085C1	38, 384
Rapaport, Elliot	Splanchnic circulatory dynamics—hyperkinetic states	H–5817	4, 885
Roe, Benson B	Prosthetic aortic valve—further study and development	H–4680C1	23, 980
Roe, Benson B	Myocardial metabolic responses to cardioplegia	H–4864C1	14, 798
Severinghaus, John	Uneven pulmonary blood flow and embolism	H–3961C2	16, 933
Sokolow, Maurice	Biochemical and clinical studies in fibrinolysis	H–5146	33, 755
Sokolow, Maurice	----do	H–5146S1	2, 284
Weirich, William L	Effects of cardioplegic drugs on ventricular function	H–3964C2	18, 600
Wissig, Steven L	An electron microscope study of capillary permeability	H–4512C1	19, 130
Institution total, 30 grants, $1,001,471			

Grantee	Project Title	Grant No.	Amount
CALIFORNIA—Continued			
SAN FRANCISCO—Continued			
Children's Hospital			
Aggeler, Paul M	Purified clotting factors	H-2754C4	$30, 342
Aggeler, Paul M	----do	H-2754C4S1	34, 951
Cuthbertson, E. M	The control of the slow waves of the plethysmogram	H-4840C1	7, 187
Gilfillan, R. S	Peripheral circulation during cardiac bypass	H-5187C1	7, 130
Institution total, 4 grants, $79,610			
Irwin Memorial Blood Bank of the San Francisco Medical Society			
Perkins, Herbert A	Preservation of donor blood for open heart surgery	H-5652	14, 191
Institution total, 1 grant, $14,191			
Mount Zion Hospital and Medical Center			
Freed, S. Charles	Role of corticosteroids in naturesis	H-1006C9	18, 676
Friedman, Meyer	Excretion and destruction of cholesterol in the body	H-119C11	41, 164
Friedman, Meyer	Central nervous system and coronary disease	H-3429C1	18, 198
Friedman, Meyer	----do	H-3429C1S1	6, 900
Leeds, Sanford E	Lymphatics and cardiopulmonary function	H-3180C3	15, 584
Leeds, Sanford E	----do	H-3180C3S1	7, 813
Paley, Hyman W	Hemodynamic effects of negative pressure breathing	H-6179	11, 200
Pearl, Felix L	Replacement of coronary circulation with systemic blood	H-2010C5	17, 211
Pearl, Felix L	----do	H-2010C5SR	4, 016
Pearl, Felix L	----do	H-2010C5S2	4, 744
Rivkin, Lawrence M	Regional myocardial hypothermia	H-4461C2	12, 443
Rosenman, Ray H	Hypercholesteremia and coronary disease	H-5121	27, 939
Institution total, 12 grants, $185,888			
Presbyterian Medical Center			
Levy, Joseph V	Effects of mineralosteroids on myocardial function	H-6027	20, 222
Institution total, 1 grant, $20,222			
San Francisco Institute of Medical Science			
Gerbode, Frank	Studies in cardiovascular diseases	H-5132C1	56, 752
Gerbode, Frank	----do	H-5132C1S1	22, 885
Roberts, Kathleen E	Renal function in acidosis	H-6665	7, 309
Selzer, Arthur	Digitalis in open heart surgery	H-4940C1	13, 823
Institution total, 4 grants, $100,769			

Grantee	Project Title	Grant No.	Amount
CALIFORNIA—Continued			
SAN MATEO			
Community Hospital of San Mateo County			
Rubenstein, Edward	Studies on extremity blood temperature	H-4544C1	$10,643
Institution total, 1 grant, $10,643			
STANFORD			
Stanford University			
Abrams, Herbert L	Cineangiocardiographic studies of the heart	H-3043C3	10,350
August, Joseph T	Adjustment to steroid-induced sodium retention	H-4421C1	14,260
Bellville, J. W	Respiratory effects of analgesic and anesthetic drugs	H-5847	25,599
Cohn, Roy B	Hypertrophy to cirrhosis of the liver	H-2278C4	21,054
Connolly, John E	Mechanical circulatory support in acute heart failure	H-3805C2	19,625
Connolly, John E	----do	H-3805C2S1	5,375
Djerassi, Carl	International symposium on natural products	H-5211	10,000
Eldridge, Frederic	Studies on the mechanism of dyspnea	H-3224C3	14,991
Farber, Eugene M	Skin blood flow distribution in selected dermatoses	H-3833C2	22,532
Feigen, George A	A study of anaphylaxis in the isolated heart	H-3693C2	14,778
Gould, R. G	Effects of inhibitors of cholesterol biosynthesis	H-5360S1	9,763
Gould, R. G	----do	H-5360C1	29,926
Hogness, David S	Induced synthesis of enzymes in bacteria	H-4824C1	19,564
Hultgren, Herbert N	Fixed resistance of pulmonary circulation	H-2583C4	3,450
Hultgren, Herbert N	Cardiac motion, heart sounds and murmurs	H-3267C3	14,841
Kivel, Raymond M	Liver circulation studies using radioisotopes	H-4761C1	6,816
Lichton, Ira J	Uterine ischemia and body fluids in pregnancy	H-4305C2	6,401
Loring, Hubert S	Ribonucleotide and ribose phosphate chemistry	H-1938C6	27,207
Luetscher, John A	Renal function in acidosis and alkalosis	H-4049C2	10,292
Payne, Rose	Leukoagglutinins and transfusion reactions	H-3365C3	10,350
Pool, Judith G	Pathophysiology of hemophilia	H-5280C1	17,910
Rantz, Lowell A	Hemolytic strep infection and rheumatic fever	H-700C10	26,344
Schrier, Stanley L	Metabolism of erythrocyte stroma	H-5305C1	10,220
Shumway, Norman E	Intracardiac surgery and surgical research	H-4658C1	35,000
Stamey, Thomas A	Test for unilateral renal ischemia in hypertension	H-6631	11,437
Stamey, Thomas A	----do	H-6631S1	13,292
Tsuboi, Kenneth K	Metabolism of cardiac nucleotides	H-5212C1	17,250
Institution total, 27 grants, $428,627			

630825 O - 62 - 2

Grantee	Project Title	Grant No.	Amount
CALIFORNIA—Continued			
TORRANCE			
Little Company of Mary Hospital			
Roberts, James C., Jr	Canine atherosclerosis in East Tennessee	H–5957	$7, 216
Institution total, 1 grant, $7, 216			
STATE TOTAL, 233 grants			4, 807, 286
COLORADO			
BOULDER			
Colorado, University of			
Heim, Harold C	Effect of emetine on heart metabolism	H–5476	14, 898
Institution total, 1 grant, $14, 898			
DENVER			
Colorado, University of			
Blount, S. Gilbert	Pulmonary circulatory dynamics	H–1208C8	15, 000
Chapman, Robert G	Erythrocyte metabolism	H–6125	12, 591
Cooper, W. Gregory	Histochemical properties of cardiac muscle	H–2469C4	10, 000
Eiseman, Ben	Experimental production of emphysema	H–3872C2	9, 200
Feldman, Arnold	Quantitation of lymph flow from extreitmies	H–5544	2, 243
Filley, Giles F	Cardiopulmonary disability for physical exercise	H–3191C3	12, 000
Hill, Robert M	Myocardial derivatives as indicators of infarction	H–5250	8, 890
Holmes, Joseph H	Ultrasonic studies of the cardiovascular system	H–2115C5	20, 470
Kramish, David	Production and evaluation of valvular prostheses	H–4892C1	14, 835
Reeve, E. B	Mechanisms regulating plasma protein	H–2262C5	27, 550
Reiss, Oscar K	Carbohydrate and pyruvate metabolism in the heart	H–4822C1	13, 306
Schopp, Robert T	Blood pressure regulation	H–5474	4, 141
Swan, Henry	Surgical therapy of cardiovascular disease	H–2710C4	29, 024
Von Kaulla, Kurt N	Spontaneous fluctuations of human coagulation *in vivo*	H–5538	24, 716
Walker, Colin H	Pump oxygenation in neonatal distress syndromes	H–5481	10, 305
Watkins, David H	Butadiyne as a lung clearance test	H–3698C2	16, 612
Willson, John T	Occult intravascular fibrin deposition	H–5798	12, 045
Institution total, 17 grants, $242, 928			

Grantee	Project Title	Grant No.	Amount
COLORADO—Continued			
DENVER—Continued			
National Jewish Hospital			
Newman, Melvin M	Development of mitral and aortic valve prostheses	H–6076	$15, 000
Permutt, Solbert	Pulmonary diffusing capacity	H–4555C1	10, 000
Permutt, Solbert	Cardiopulmonary physiology in bronchial asthma	H–6168	24, 579
Institution total, 3 grants, $49, 579			
FORT COLLINS			
Colorado State University Research Foundation			
Alexander, A. F	High mountain disease in cattle	H–2997C3	31, 682
Institution total, 1 grant, $31, 682			
Individual Grant			
Houston, Charles S	Prosthesis to replace irretrievably incompetent heart	H–4282C1S1	1, 700
Institution total, 1 grant, $1, 700			
STATE TOTAL, 23 grants			340, 787
CONNECTICUT			
HARTFORD			
Connecticut State Department of Health			
Eisenberg, Henry	Middlesex County heart disease study	H–4257C2	17, 825
Institution total, 1 grant, $17, 825			
NEW HAVEN			
Yale University			
Albrink, Margaret J	Serum triglycerides in coronary artery disease	H–3498C3	14, 950
Barron, Donald Henry	Physiology of pregnant animal	H–1676C12	7, 250
Chang, Chu Haui	Effect of irradation on small blood vessels	H–6295	14, 145
Epstein, Franklin H	Water and electrolytes in health and disease	H–834C10	18, 874
Finch, Stuart C	Immunologic mechanisms of leukocyte abnormalities	H–1577C7	18, 559
Glenn, William W. L	Experimental cardiac surgery	H–851C10	22, 920
Glenn, William W. L	Remote stimulation by radio frequency transmission	H–4651C1	8, 605
Goodyer, Allan V. N	Cardiovascular and renal responses to stress	H–1808C6	10, 000
Gray, Frank Davis	Pulmonary hypertension and vascular reflexes	N–1516C7	5, 775
Gray, Frank Davis	Pulmonary capillary phenomena in edema of the lung	H–3263C3	15, 755
Greene, Nicholas M	Peripheral circulation, oxygen tension, and metabolism	H–3359C2	6, 181

Grantee	Project Title	Grant No.	Amount
CONNECTICUT—Continued			
NEW HAVEN—Continued			
Yale University—Continued			
Greenspan, Richard	Intravenous aortography—continuing studies	H–5518	$17, 367
Greenspan, Richard	....do	H–5518S1	11, 295
Hales, Milton R	Changes in hepatic flow in liver cirrhosis	H–2639C4	13, 340
Hukill, Peter B	Experimental pulmonary hemosiderosis	H–4784C1	10, 235
Liebow, Averill A	Studies of pulmonary hypertension	H–3511C3	14, 551
Liebow, Averill A	Fluid absorption, expansibility and injury of lung	H–4400C2	20, 947
Lipsky, Seymour R	Study of fatty acid metabolism by gas chromatography	H–3558C3	62, 812
Lowman, Robert M	Arteriography of induced coronary arterial lesions	H–4834C1	11, 730
Milstone, J. H	Thrombokinase of the blood and fibrinolysis	H–3906C2	22, 050
Scatliff, James H	Roentgenographic visualization of coeliac axis	H–4737C1	4, 876
Talner, Norman S	Pulmonary factors as a cause of hypoxemia	H–6233	13, 593
Waters, Levin L	Lesions of experimental coronary atherosclerosis	H–1794C6	16, 151
Institution total, 23 grants, $361,961			
STORRS			
Connecticut, University of			
Helmbolt, Charles	The vascular aspects of aleutian mink disease	H–5175C1	20, 000
Jayne, Edgar P	Age changes in the suprarenal gland	H–1949C6	4, 885
Jensen, Robert G	Fatty acid content of milk lipids	H–4914C1	14, 620
Scott, Joseph L	Comparative metabolism *in vivo* of C^{14} epinephrine	H–3829C2	3, 909
Institution total, 4 grants, $43,414			
STATE TOTAL, 28 grants			423, 200
DELAWARE			
DOVER			
American Society for Study of Arteriosclerosis			
McGill, Henry C	Grading lesions of atherosclerosis	H–3165C4	6, 000
Institution total, 1 grant, $6,000			
Dover Medical Research Center, Inc.			
Pollack, Otaker J	Carbohydrates and hypercholesteremia in rabbits	H–2534C4	16, 560
Institution total, 1 grant, $16,560			
STATE TOTAL, 2 grants			22, 560

Grantee	Project Title	Grant No.	Amount
DISTRICT OF COLUMBIA			
WASHINGTON, D.C.			
Children's Hospital Research Foundation			
Berman, Leonard B	Extra-renal capillary flow in renal disease	H–5119	$12, 650
Leiken, Sanford Leo	Immunoelectrophoretic studies of human hemoglobins	H–3285C3	8, 050
Parrott, Robert H	Virus effects on heart and blood in children	H–5550	24, 150
Institution total, 3 grants, $44,850			
Fellowship Free Service			
Field, Henry, Jr	Deposit of cholesterol in intima and dietary fatty acid	H–4374C1	11, 845
Institution total, 1 grant, $11,845			
George Washington University			
Adelson, Edward	*In vivo* dynamics of clotting and hypercoagulability	H–2274C5	23, 354
Bailey, John M	Lipid utilization by cultured mammalian cells	H–5062C1	10, 695
Blades, Brian B	A combined oxygenator and heat exchanger	H–5853	25, 000
Jacobson, Marshall	A study of chronic pyelonephritis	H–2120C5	15, 941
Kelser, George A	Frequency analysis of intracardiac electrocardiograms	H–4345C1	14, 950
Leese, Chester E	Anticipation of stress upon visceral response	H–4861C1	12, 229
Orvis, Harold H	The hypotensive action of enzyme inhibitors	H–5801	12, 723
Parrish, Alvin E	The pathogenesis of glomerulonephritis	H–3732C2	12, 496
Sullivan, Lawrence	pH effect on excretion of weak acids and bases	H–5788	11, 582
Treadwell, Carleton R	Metabolic fate of plant sterols	H–2746C4	11, 500
Treadwell, Carleton R	Studies on the mechanism of cholesterol absorption	H–1897C6	8, 050
Treadwell, Carleton R	Regulation of blood and tissue cholesterol levels	H–2033C6	23, 000
Institution total, 12 grants, $181,520			
Georgetown University			
Finnerty, Frank A	Blood volumes in toxemia of pregnancy	H–2509C4	9, 754
Finnerty, Frank A	Retinal and renal findings in glomerulonephritis	H–4286C1	7, 245
Freis, Edward D	Chemotheraphy of hypertension	H–720C11	16, 276
Harvey, W. Proctor	Physiologic studies of heart sounds and murmurs	H–3319C3	6, 921
Hufnagel, Charles A	Cardiovascular and cardiovalvular replacement	H–914C10	17, 272
Kruger, Gustave O	Blood vessel and tissue response to sclerosing agents	H–5727	2, 300
Leveque, Phillip E	The mechanism of cardiac arrhythmias	H–5099C1	10, 405
Lilienfield, Lawrence	Renal hemodynamics—RBC and plasma transit times	H–2987C4	44, 280
Luchsinger, Peter C	Effects of exercise on pulmonary functions in disease	H–3114C4	7, 983
Luessenhop, Alfred	Intravascular approach to cerebal aneurysms	H–5414	17, 618
Marchetti, Andrew A	Application of correlation analysis to fetal EKG	H–6268	46, 340
Marcus, Frank I	Effect of liver damage on metabolism of digoxin	H–4713R2	23, 477
Pipberger, Hubert V	Digital coding of clinical cardiovascular information	H–4576C1	15, 534

Grantee	Project Title	Grant No.	Amount
DISTRICT OF COLUMBIA—Continued			
WASHINGTON, D.C.—Continued			
Georgetown University—Continued			
Rath, Charles E	Hematological aspects of renal disease	H-2646C4	$13, 507
Rath, Charles E	Evaluation of iron chelates in iron storage disease	H-5592	18, 538
Rose, John C	Circulation in the left ventricle	H-1904C6	8, 660
Zorbach, William W	New synthetic cardenolides	H-5839	14, 723
Institution total, 17 grants, $280,833			
Howard University			
Booker, Walter M	Assay of catechol-amines	H-4438C2	13, 800
Brown, Earlene	Arginine vasopressin and its possible role in stress	H-5835	9, 895
French, David M	Myocardial physiology after cardioplegia—cardiotomy	H-5549	18, 605
Harden, K. Albert	Pulmonary and cardiac dynamics in heart and lung disease	H-2675C4	7, 292
Harden, K. Albert	----do	H-2675C4S2	695
Hawthorne, Edward W	Experimental hypertension	H-1015C9	42, 738
Hawthorne, Edward W	----do	H-1015C9S1	2, 412
Jenkins, Melvin E	Transplacental fetal bleeding and fetal mortality	H-3754C2	6, 000
Jenkins, Melvin E	----do	H-3754C2S1	312
Spellman, Mitchell	Use of ileal transplants as aortic autografts in dog	H-3848C2S1	422
Spellman, Mitchell	----do	H-3848C2S2	1, 183
Spellman, Mitchell	----do	H-3848C3	29, 933
Wong, Harry Y. C	Experimental atherogenesis	H-2420C4R1	25, 000
Wong, Harry Y. C	----do	H-2420C4RS	1, 208
Institution total, 14 grants, $159,495			
James F. Mitchell Foundation for Medical Education and Research			
Astrup, Tage	Investigations on pathogenesis of arteriosclerosis	H-5020S1	191, 905
Institution total, 1 grant, $191,905			
National Academy of Sciences—National Research Council			
Thompson, William	The pathology of experimental beriberi	H-2999C4	8, 625
Welt, Isaac D	Effects of drugs on the cardiovascular system	H-2045C5	88, 418
Institution total, 2 grants, $97,043			
Pan American Sanitary Bureau			
McGill, Henry C., Jr	Atherosclerosis in Latin America	H-4152C1	48, 300
Tejada, Carlos	Comparative epidemiology of atherosclerosis	H-2653C4	48, 613
Institution total, 2 grants, $96,913			

Grantee	Project Title	Grant No.	Amount
DISTRICT OF COLUMBIA—Continued			
WASHINGTON, D.C.—Continued			
Reed Research Foundation			
Martinek, Johann	Mathematical theory of electrocardiography	H–2263C4	$7, 100
Martinek, Johann	The mathematical theory of blood flow	H–2402C4	8, 894
Institution total, 2 grants, $15,994			
Washington Hospital Center			
Manchester, B	Prevention of coronary thrombosis	H–5324C1	13, 621
Institution total, 1 grant, $13,621			
Yater Clinic			
Wedum, Bernice G	Studies on the etiology of rheumatic fever	H–3554C2S1	5, 297
Wedum, Bernice G	----do	H–3554C3	14, 950
Institution total, 2 grants, $20, 247			
STATE TOTAL, 57 grants			1, 114, 266
FLORIDA			
CORAL GABLES			
Miami, University of			
Boucek, Robert J	Studies on aging and its cardiovascular complications	H–4989C1	50, 000
Boucek, Robert J	Intercalative angiography-cardiovascular spot filming	H–5865	20, 000
Boyles, Paul W	Biochemical and clinical studies of fibrinolysin	H–6688	2, 850
Boyles, Paul W	-----do	H–6688C1	13, 915
Gollan, Frank	Deep hypothermia by veno-arterial cooling	H–6178	28, 248
Hulet, William H	Postural natriuresis in normal and hypertensive man	H–5494	11, 804
Litwak, Robert S	Continuous blood volume monitor in open heart surgery	H–6153	25, 949
Marks, Asher	Physiologic and biochemical effects of aging on lung	H–3336C3	13, 224
Miale, John B	Coagulase-globulin and blood coagulation factors	H–2478C4	9, 832
Miale, John B	Synthesis of normal and abnormal hemoglobins	H–4522R1	16, 958
Murphy, William P	Applied research on aging	H–4794C1	20, 000
Paff, George H	Augmentation of chemical energy of the heart	H–3565C3	12, 335
Ring, Gordon C	Arteriovenous anastomosis in pulmonary circuit	H–2483C4	6, 212
Sallman, Bennett	Metabolic patterns of the rabbit heart	H–4704C1	13, 800
Schiff, Eva G	Autonomic nuclei and the cardiovascular system	H–6271	18, 663
Slotta, Karl H	Phospholipids and the formation of thromboplastin	H–4889S1	9, 928
Slotta, Karl H	-----do	H–4889C1	40, 378
Weiss, A. Kurt	Metabolism during aging in highly inbred rats	H–3901C2	10, 350
Institution total, 18 grants, $324,446			

Grantee	Project Title	Grant No.	Amount
FLORIDA—Continued			
GAINESVILLE			
Florida, University of			
Anton, Aaron H	Norepinephrine, epinephrine metabolism hypertension	H-5251	$10, 189
Davis, George K	Dietary trace elements and heart muscle degeneration	H-1318C8	30, 475
Fregly, Melvin J	The role of the thyroid gland in hypertension	H-3503C2	6, 354
Gravenstein, J. S	Interaction of thyroid hormones and norepinephrine	H-5050C1	1, 966
Gravenstein, J. S	Interaction of cardiac glycosides and epinephrine	H-5990	1, 403
Newcomb, Thomas F	Hemolytic disease and thrombosis	H-4967C1	15, 000
Noyes, Ward D	Problems in erythrokinetics	H-6126	29, 699
Prystowsky, Harry	Exchange of respiratory gases across the placenta	H-4246C1	8, 050
Putnam, Frank W	Biophysical characterization of proteins and viruses	H-2966C4	28, 646
Robbins, R. C	Unknown volatile substance in erythrocytes	H-5588	12, 982
Schiebler, Gerold L	Longitudinal study of induced heart block	H-5407	16, 807
Simpson, C. F	The cause of dissecting aneurysms of turkeys	H-3776C2	19, 931
Taylor, W. J	Liver blood flow during hypoxia, acidosis, alkalosis	H-4326C1	11, 714
Taylor, W. J	Sickle cell anemia	H-5004C1	24, 771
Institution total, 14 grants, $217,987			
JACKSONVILLE			
Baptist Memorial Hospital			
Anderson, A. E	Fibrosis in emphysematous and aging lungs	H-4088C1	5, 117
Foraker, Alvan G	Interference microscopy in cardiovascular pathology	H-4321C1	11, 201
Institution total, 2 grants, $16, 318			
Florida State Board of Health			
Hardy, Albert V	Organization and initiation of public health research	H-3594C3	22, 140
Institution total, 1 grant, $22,140			
MIAMI BEACH			
Mount Sinai Hospital of Greater Miami			
Samet, Philip	Blood responses to treatment of heart failure	H-2436C4	5, 750
Samet, Philip	Respiration and circulation in pulmonary emphysema	H-4249C1	6, 842
Samet, Philip	----do	H-4249C1S1	7, 245
Institution total, 3 grants, $19,837			
ORANGE PARK			
Yerkes Laboratories of Primate Biology, Inc.			
Riopelle, Arthur J	Support of the Yerkes Laboratories of primate biology	H-5691C1	172, 500
Institution total, 1 grant, $172,500			

Grantee	Project Title	Grant No.	Amount
FLORIDA—Continued			
ORLANDO			
Orange Memorial Hospital			
Evans, Elwyn	Heparin versus warfarin therapy—cooperative study	H–5988	$1,000
Institution total, 1 grant, $1,000			
ST. PETERSBURG			
Florida State Board of Health			
Carter, Howard W	A comprehensive public health program for the aged	H–3938C2	47,104
Institution total, 1 grant, $47,104			
TALLAHASSEE			
Florida State University			
Thonnard, Ernst	Hormonal control of basophilic leukocytes	H–4534C1	5,432
Institution total, 1 grant, $5,432			
STATE TOTAL, 42 grants			826,764
GEORGIA			
ATHENS			
Georgia, University of			
Odum, Eugene P	Lipid deposition in migratory birds	H–4844R1	3,000
Institution total, 1 grant, $3,000			
ATLANTA			
Emory University			
Binkley, Francis	Isolation and action of peptidases and phosphatases	H–1273C8	26,450
Bor, Naci M	Oxygen tension measurement by polarography	H–5270	15,000
Bor, Naci M	Partial heart-lung bypass in heart failure and shock	H–5639	27,077
Bourne, Geoffrey H	Histochemistry of blood vessels	H–4553C1	11,845
Bourne, Geoffrey H	----do	H–4553C1S1	5,375
Brecher, Gerhard A	Physiological and pathological blood flow dynamics	H–3796C2	18,400
Cooper, F. W., Jr	Prognosis in peripheral vascular disease	H–5628	13,588
Cotten, Marion D	Studies on ventricular function	H–3339C3	14,950
Galambos, John T	Sulfomucopolysaccharides in cardiovascular diseases	H–4714C1	11,500
Galletti, Pierre M	Studies on controlled pulmonary circulation	H–4749C1	10,000
Mayer, Steven E	The biochemistry of the sympathetic nervous system	H–4626C1	8,797
Mayer, Steven E	----do	H–4626C1S1	19,515

Grantee	Project Title	Grant No.	Amount
GEORGIA—Continued			
ATLANTA—Continued			
Emory University—Continued			
Moran, Neil C	The pharmacology of the sympathetic nervous system	H–2953C3	$17, 877
Schlant, Robert C	Studies on the intimal penetration of cholesterol	H–4976C1	7, 658
Tager, Morris	Enzymatic and blood clotting action of staphylococci	H–1895C6	19, 414
Tager, Morris	----do	H–1895C6S1	498
Tuttle, Elbert P., Jr	Arterial presso-receptors and sodium excretion	H–4191C1	25, 000
Tuttle, Elbert P., Jr	Thermistor measurement of tissue blood flow	H–6171	8, 407
Institution total, 18 grants, $261,351			
Georgia Department of Public Health			
Barrow, J. G	Lipid studies in vegetarian and nonvegetarian monks	H–5903	8, 000
Barrow, J. G	Epidemiologic study of atherosclerosis in Georgia	H–3262C3	53, 498
Institution total, 2 grants, $61,498			
Piedmont Hospital			
Bloom, Walter L	Study of sex differences in metabolism during fasting	H–5301C1	11, 000
Institution total, 1 grant, $11,000			
AUGUSTA			
Georgia, Medical College of			
Ahlquist, Raymond P	A pharmacologic study of the adrenergic receptor	H–3514C3	11, 845
Ahlquist, Raymond P	----do	H–3514C3S1	5, 453
Chandler, Arthur B	New technique for *in vitro* production of thrombi	H–3973C2	12, 058
Davis, Darrell L	A study of small blood vessel responses	H–5782	16, 487
Ellison, Robert G	Experimental pulmonary hypertension	H–2562C4	4, 600
Ellison, Robert G	Effect of hypothermia upon myocardial metabolism	H–5432	15, 000
Hamilton, W. F	Physiological and clinical cardiovascular studies	H–240C10	16, 790
Huisman, Titus H	Inhomogeneity of hemoglobin and myoglobin types	H–5168C1	14, 260
Levy, Bernard	Mechanisms of action of adrenergic agents	H–6022	16, 790
Remington, John W	A study of peripheral bed capacity changes	H–4573C1	16, 933
Remington, John W	----do	H–4573C1S1	8, 945
Teabeaut, James R	Aminonucleoside nephrosis—histochemistry	H–5315C1	8, 579
Wood, J. E	Course of arteriosclerosis measured quantitatively	H–4453C2	13, 340
Wycoff, H. D	Cholesterol ester chemistry and animal metabolism	H–2384C4	9, 200
Institution total, 14 grants, $170,280			

Grantee	Project Title	Grant No.	Amount
GEORGIA—Continued			
CLAXTON			
Evans County Health Department			
Hames, Curtis G	Epidemiological study of atherosclerosis	H–3341C3	$29, 168
Institution total, 1 grant, $29,168			
STATE TOTAL, 37 grants			536, 297
HAWAII			
HONOLULU			
Queens Hospital			
Hartwell, Alfred S	Ethnic cardiovascular survey in Hawaii	H–5615	11, 500
Institution total, 1 grant, $11,500			
Individual Grant			
Jim, Robert T	Survey and study of the hemoglobin types in Hawaii	H–3480C1S1	2, 100
Jim, Robert T	----do	H–3480C2	800
Institution total, 2 grants, $2,900			
STATE TOTAL, 3 grants			14, 400
IDAHO (None)			
ILLINOIS			
CHICAGO			
Chicago Board of Health			
Stamler, J	Epidemiology of C–V diseases in industrial workers	H–4197C3	40, 940
Institution total, 1 grant, $40,940			
Chicago Medical School			
Baker, Saul P	Heparin-activated clearing factor in man	H–3716C2	12, 420
Baker, Saul P	Immunology of serum lipoproteins in atherosclerosis	H–4951C1	19, 722
Elias, Hans	Dynamics of blood flow in the renal glomerulus	H–4216C1	2, 000
Luisada, Aldo A	New long range experiments in heart transplatation	H–4067C1	9, 890
Luisada, Aldo A	Equipment of a new experimental cardiology laboratory	H–6255	22, 585
Nickerson, John L	Cardiodynamic studies with the ballistocardiograph	H–2725C5	8, 050

Grantee	Project Title	Grant No.	Amount
ILLINOIS—Continued			
CHICAGO—Continued			
Chicago Medical School—Continued			
Strong, Leon H	Developing vessels within the mammalian neural tube	H–4838S1	$592
Strong, Leon H	----do	H–4838C1	7, 325
Zalter, Rudolf	Acoustic transmission characteristics of the thorax	H–5921	17, 250
Institution total, 9 grants, $99,834			
Chicago, University of			
Adams, William E	Determination of pulmonary reserve	H–1894C12	15, 327
Anker, Herbert S	Mechanisms related to fatty acid synthesis	H–1614C13	33, 350
Burrows, Benjamin	Prognosis of chronic obstructive pulmonary emphysema	H–4109C1	14, 950
Dorfman, Albert	Biosynthesis of hyaluronic acid	H–311C11	50, 000
Dorfman, Albert	Comparison of therapies of acute rheumatic fever	H–3418C3	8, 518
Ferguson, Donald J	Studies on pulmonary arteriosclerosis	H–6010	8, 720
Glagov, Seymour	Pathology of arterial adaptation to changes in flow	H–5654	24, 351
Granston, Arthur S	Vascular changes in chronic pulmonary disease	H–5656	16, 832
Jacobson, Leon O	Purification of erythropoietin for investigational use	H–5393C1	107, 525
Jones, Richard J	Dietary elements on serum lipids and atherosclerosis	H–1119C9	23, 408
Moseley, Robert D	Televised and video-taped fluoroscopy	H–5330C1	18, 285
Okita, George T	Metabolism and mechanism of action of digitalis	H–6208	18, 970
Perkins, John F., Jr	Peripheral versus central respiratory chemoreceptors	H–5516	20, 396
Perkins, John F., Jr	----do	H–5516S1	9, 055
Prec, Klara J	Cardiac output in the newborn	H–2188C4	10, 708
Pullman, Theodore N	Factors affecting electrolyte and water excretion	H–315C11	19, 699
Rabinowitz, Murray	Studies of cardiopulmonary physiology	H–3170C3	17, 250
Rabinowitz, Murray	Enzymatic phosphorylation of proteins	H–4442C2	17, 250
Rowley, Donald A	Pathological studies on inflammation and immunity	H–5667	21, 030
Spargo, Benjamin H	Renal changes in K-plus deficiency	H–2986C4	23, 136
Spargo, Benjamin H	Electron microscope for clinical research	H–3690C3	20, 832
Steblay, Raymond W	Specificity of human nephrotoxic antigens	H–4785C1	14, 375
Warner, Nancy E	Renal microcirculation in experimental nephritis	H–3944C1	10, 321
Wissler, Robert W	Factors responsible for atherosclerotic lesions	H–2174C5	39, 301
Institution total, 24 grants, $563,589			
Hektoen Institute for Medical Research of the Cook County Hospital			
Gasul, Benjamin M	A comprehensive study of ventricular septal defects	H–3518C3	26, 450
Gasul, Benjamin M	Evaluation of intercalative angiocardiography	H–5837	11, 500
Lendrum, Bessie L	Determinants of pulmonary artery elastic properties	H–5374C1	8, 208
Lev, Maurice	Congenital heart disease program	H–3351C3	69, 000

Grantee	Project Title	Grant No.	Amount
ILLINOIS—Continued			
CHICAGO—Continued			
Hektoen Institute for Medical Research of the Cook County Hospital—Continued			
Lev, Maurice	Pathology of conduction system of human heart	H–3440C3	$12, 627
Morch, Ernst T	Vasopressor responses during respiratory alkalosis	H–4597C2	8, 850
Pollak, Victor E	Investigations on toxemia of pregnancy	H–5011C1	11, 845
Institution total, 7 grants, $148,480			
Illinois Institute of Technology			
Martell, Arthur E	Reactions of metal ions	H–6294	13, 035
Institution total, 1 grant, $13,035			
Illinois, University of			
Abramson, David I	Vascular responses in skin and muscle	H–2568C4	17, 653
Alpert, Norman R	Recovery oxygen consumption and anaerobic metabolites	H–2345C4	10, 600
Alpert, Norman R	Muscle efficiency and contractile mechanisms	H–2766C4	12, 937
Bliss, Harry A	Ventricular pressure-volume relations in heart disease	H–3775C2	11, 500
Ivy A. C	Relation of bile to cholesterol absorption and output	H–3411C4	7, 607
Julian, Ormand C	Myocardial revascularization	H–2480C4	17, 194
Julian, Ormand C	——do	H–2480C4S1	7, 164
Julian, Ormand C	Peripheral resistance during cardiac bypass	H–3045C3	17, 250
Kark, Robert M	Biopsy studies of kidney structure and function	H–2253C4	33, 904
Kark, Robert M	——do	H–2253C4S1	891
Kien, Gerald A	Cardiac intermediary metabolism in chronic failure	H–5775	12, 658
Krakower, Cecil A	Problems related to tissue antigens	H–1623C9	14, 439
Omachi, Akira	Electrolyte metabolism in mammalian heart	H–4155C1	8, 050
Sharp, John T	Relation of mechanics and diffusion in lung fibrosis	H–5124C1	8, 101
Sherrod, Theodore R	Resuscitation of the mammalian heart after anoxia	H–2354C4	16, 502
Whitehorn, William	Endocrine effects on metabolism of myocardium	H–1353C8	11, 558
Institution total, 16 grants, $208,008			
Loyola University			
Glaviano, Vincent V	Arteriovenous fistula characteristics of the placenta	H–5960	1, 466
Oester, Yvo Thomas	Production and therapy of arteriosclerosis	H–1401C7	9, 947
Randall, Walter C	Responses to cardiac nerve stimulation	H–2705C4	13, 800
Institutional total, 3 grants, $25,213			
Michael Reese Hospital and Medical Center			
Katz, Louis N	Cardiovascular-renal physiology and disease	H–2276C5	63, 889
Katz, Louis N	Cardiovascular clinical research	H–6375	361, 380
Miller, Albert J	Lymphatic circulation of the heart	H–5088C1	17, 250
Pick, Ruth	Effects of insulin on experimental atherosclerosis	H–3031C4	14, 375

Grantee	Project Title	Grant No.	Amount
ILLINOIS—Continued			
CHICAGO—Continued			
Michael Reese Hospital and Medical Center—Continued			
Saphir, Otto	Myocardial reaction to necrosis and foreign bodies	H–3782C2	$12, 191
Shoemaker, William	Vascular and metabolic pattern in hemorrhagic shock	H–4809C1	18, 000
Silver, Earl N	Adrenal steroids in acute and chronic rheumatic fever	H–4930C1	13, 915
Yanof, Howard M	Biophysical study of phasic splanchnic blood flow	H–6129	17, 250
Institution total, 8 grants, $518,250			
Michael Reese Research Foundation			
Robbins, Kenneth C	Preparation of human plasmin for clinical evaluation	H–4366C2	20, 479
Institution total, 1 grant, $20,479			
Northwestern University			
Compere, Edward L	Transplantation of artery to bone	H–5205	18, 618
Cugell, David W	Factors affecting lung diffusion of carbon monoxide	H–4629C1	7, 475
Flanagan, C. L	Metals and renal tubule function	H–5860	14, 562
Grodins, Fred S	Regulation of pulmonary ventilation	H–1626C9	12, 719
Kezdi, Paul	Transient bundle branch block in cardiac hypertrophy	H–5488	11, 500
Pentz, E. Irene	Streptolysin O and its biological activity	H–3706C3	13, 386
Stollerman, Gene H	Factors in group A streptococcal immunity	H–2622C4	12, 420
Stollerman, Gene H	Streptococcal infections after prolonged chemoprophylaxis	H–2623C4	19, 105
Swenson, Orvar	Arterial repair of transposition of the great vessels	H–6082	16, 221
Wartman, William B	Histochemistry of experimental myocardial injury	H–1815C6	46, 955
Institution total, 10 grants, $172,961			
Presbyterian—St. Lukes Hospital			
Beattie, Edward J	Myocardial blood flow measure by radioactive tracers	H–5186	12, 040
Beattie, Edward J	Effects of hypercholesterolemia on synthetic grafts	H–5316	9, 476
Beattie, Edward J	Effect of left ventricular aneurysms on hemodynamics	H–6202	8, 057
Graettinger, John S	Dynamics of congestive heart failure	H–5579	15, 238
Hass, George M	Human and experimental athero-arteriosclerosis	H–1630C9	69, 000
Hass, George M	----do	H–3215C3	36, 110
Mattenheimer, H	Enzymatic aspects of renal tubular function	H–3912C1S2	2, 300
Mattenheimer, H	----do	H–3912C2	9, 947
Muehrcke, Robert C	Relation of kidney and adrenal gland to hypertension	H–5529	12, 935
Olwin, John	Comparison of results of different prothrombin assays	H–5964	9, 200
Olwin, John H	The role of phospholipids in blood coagulation	H–3940C2	17, 135
Olwin, John H	Relation of blood coagulation to lipemia clearing	H–5229	24, 505
Paul, Oglesby	A longitudinal study of coronary heart disease	H–3093C2	12, 473
Institution total, 13 grants, $238,416			

Grantee	Project Title	Grant No.	Amount
ILLINOIS—Continued			
EVANSTON			
Evanston Hospital Association			
Cox, George E	Human cholesterol metabolism using stable isotopes	H–5978	$7, 940
Cox, George E	----do	H–5978C1	6, 350
Gilbert, Robert P	Endotoxin shock and mechanisms of pooling	H–6266	30, 000
McKeever, William	Cardiac oxygen uptake in beating and asystolic states	H–6102	26, 093
Institution total, 4 grants, $70,383			
Northwestern University			
Bender, Myron L	Chemical studies of enzymatic hydrolysis mechanisms	H–5726	24, 214
Bender, Myron L	----do	H–5726S1	22, 345
Brandfonbrener, M	Physiological factors affecting myocardial metabolism	H–4356C1	6, 210
Brown, Kenneth D	Histochemical studies in cerebral atherogenesis	H–4628C1	7, 500
Brown, Kenneth D	Structure and biological activity of heparin	H–4770C1	9, 125
Earle, David P., Jr	Development and progression of renal disease	H–1890C6	25, 300
Jacobs, Henry R	Deformability of red cell packs in health and disease	H–5446C1	12, 765
Kezdi, Paul	Rehabilitation following mitral commissurotomy	H–4915C1	7, 245
Klotz, Irving M	Metallo-protein complexes	H–2910C6	11, 500
Lewis, Floyd John	Intracardiac and general surgery during hypothermia	H–2879C4	35, 272
Lorand, Laszlo	Peptides arising during coagulation of blood	H–2212C5	34, 735
Siegal, Alan C	Studies on group A streptococcal infection in children	H–4164C2	10, 925
Slade, Hutton D	Biological activities of group A streptococcus	H–3709C3	15, 755
Waldstein, Sheldon	New methods for study of hepatic circulation	H–2187C5	10, 755
Yokoyama, Hisako O	Proteins of the myocardium and conducting tissue	H–4937C1	7, 475
Institution total, 15 grants, $241,121			
URBANA			
Illinois, University of			
Draper, Harold H	Biochemical aspects of aging	H–2771C4	11, 500
Hall, B. Vincent	Structural basis of capillary permeability	H–2775C3	15, 609
Kummerow, Fred A	Relation of dietary fats to atherosclerosis	H–1819C6	24, 707
Kummerow, Fred A	Relationships of dietary factors to atherosclerosis	H–3063C3	23, 705
Ristic, Miodrag	Role of blood platelets in hemolytic disorders	H–5871	27, 182
Wolf, George	Biosynthesis of cholesterol—vitamin A and steroids	H–1945C6	8, 745
Institution total, 6 grants, $111,448			
STATE TOTAL, 118 grants			2, 472, 157

Grantee	Project Title	Grant No.	Amount
INDIANA			
BLOOMINGTON			
Indiana University, Foundation Research Division			
Failey, Robert B., Jr	Pharmacological studies of human bile acids	H–4968S1	$2, 204
Failey, Robert B., Jr	----do	H–4968C1	21, 217
Friedman, Julius J	Alterations in periphero-vascular dynamics in shock	H–4684C1	7, 463
Friedman, Julius J	----do	H–4684C1S1	9, 950
Gardier, Robert W	Mechanism and abolition of vasopressin tachyphylaxis	H–4982C1	6, 900
Gibson, David M	Fatty acid biosynthesis	H–4219C2	11, 500
Gurd, Frank R	Reactivity and structure of proteins and lipoproteins	H–5556	94, 024
Hickam, John B	Cardiovascular clinical research center	H–6308	466, 651
Hickam, John B	Study of intrapulmonary gas mixing	H–4080C2	32, 559
Johnson, Paul C	Myogenic response of arterial vessels	H–5200C1	7, 245
Judson, Walter E	Cardiovascular-renal responses in hyperkinetic states	H–2961C3	11, 500
Lurie, Paul R	Maximal exercise tolerance studies in children	H–4998R1	1, 955
Manfredi, Felice	Study of C_{14}-labeled tham in respiratory acidosis	H–5996	8, 050
Murray, Raymond G	Studies on the fate of lymphocytes	H–6257	11, 442
Rostorfer, Howard	A study of the functions of the hypoxic kidney	H–5625	18, 148
Selkurt, Ewald E	Liver circulation in hemorrhagic shock	H–4056C2	18, 877
Shumacker, Harris B	Surgical treatment of cardiovascular abnormalities	H–2035C5	41, 975
Stier, Theodore J	Survival of hearts during anoxia and hyperthermia	H–5022C1	5, 980
Webb, Richard L	Vital studies of blood vessels, lymphatics, and nerves	H–4857C1	10, 864
Institution total, 19 grants, $788,504			
GREENCASTLE			
De Pauw University			
Wagoner, Kenneth S	The effect of psychological stress on atherosclerosis	H–4705C1	8, 740
Institution total, 1 grant, $8,740			
LAFAYETTE			
Purdue Research Foundation			
Christensen, G. C	Comparative functional anatomy of coronary vessels	H–4217C2	14, 778
Data, John B	Cardio-activity—lactones related to digoxigenin	H–4624C1	13, 420
Morris, W. H. M	Status and rehabilitation of the farm cardiac	H–3185C3	71, 223
Whistler, Roy L	Polysaccharide sulfates	H–4993C1	10, 956
Wiebers, Jacob E	Physiological responses of young and old men to heat	H- 4700C1	8, 585
Institution total, 5 grants, $118,962			

Grantee	Project Title	Grant No.	Amount
INDIANA—Continued			
NOTRE DAME			
Notre Dame, University of			
Lane, Thomas J	Studies of amino acids protein metal complexes	H–2218C5	$4,094
Institution total, 1 grant, $4,094			
STATE TOTAL, 26 grants			920,300
IOWA			
AMES			
Iowa State, University of, Science and Technology			
Allen, Robert S	Lipid and fatty acid absorption	H–4969C1	17,844
Getty, Robert	Gerontological studies	H–4487C2	20,000
Getty, Robert	do	H–4487C2S1	2,300
Swenson, Melvin J	Cardiovascular dynamics involving blood volume	H–5228C1	10,796
Institution total, 4 grants, $50,940			
IOWA CITY			
Iowa State, University of			
Bedell, George N	Lung diffusing capacity in congenital heart disease	H–3304C3	9,505
Carew, David P	Tissue culture of some members of the apocynaceae	H–5290	4,830
Connor, William E	Dietary lipids, chylomicronemia, and atherosclerosis	H–4621C1	10,127
Eckstein, John W	Venomotor responses to circulatory changes	H–2644C4	18,256
Imig, Charles J	Anesthetic and muscle relaxant drugs on blood flow	H–5185	4,934
McCrory, Wallace W	Renal-immunization in pathogenesis of glomerulonephritis	H–4104C2	12,000
McKee, Albert P	Isohypersensitization and viral toxicity in myocarditis	H–5447C1	17,547
Peterson, Richard E	Body composition by isotope dilution principle	H–1909C4S1	12,603
Peterson, Richard E	do	H–1909C5	44,005
Peterson, Richard E	Body fat, age and myocardial infarction	H–4698C1	14,037
Peterson, Richard E	Variability of extracellular fluid—sucrose—space	H–5337R1	11,500
Whalen, William J	A comparative study of heart function	H–5390C1	19,953
Institution total, 12 grants, $179,297			
STATE TOTAL, 16 grants			230,237

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Grantee	Project Title	Grant No.	Amount
KANSAS			
KANSAS CITY			
Kansas, University of, Medical Center			
Kittle, C.F	Postperfusion sequelae with bubble oxygenator	H-3823C2	$7,107
Kittle, C.F	Experimental production of pulmonary hypertension	H-4392C1	8,235
Klionsky, Bernard	Histochemical study of necrosis	H-2922C3	24,380
Krantz, Kermit E	Maternal-fetal relationship in the human placenta	H-4792C1	8,050
Lum, Bert K	Drug potentiation	H-3762C3	8,625
Miller, Don R	Reversibility of myocardial changes after cardioplegia	H-5335C1	7,245
Peltier, Leonard F	Blood lipase in patients with bone trauma	H-3592C3	5,750
Peters, Lawrence	Renal tubular transport of organic bases	H-2377C4	14,500
Rasmussen, Peter	The ultrastructure of myocardium in heart failure	H-4879C1	8,900
Reed, William A	Venous-arterial auto-perfusion in pulmonary embolism	H-5347C1	6,923
Reissmann, Kurt R	Studies on inhibitors of erythropoiesis	H-5502	11,155
Schloerb, Paul R	Enterodialysis with dialysing tubing	H-2363C4	35,000
Valk, William L	Causes of post-operative renal insufficiency	H-2399C1	5,405
Walaszek, Edward J	Substance A—A vasopressor polypeptide	H-4873C1	9,200
Institution total, 14 grants, $160,475			
LAWRENCE			
Kansas, University of			
Elbel, Edwin R	Body fat as related to response to activity	H-4895C1	4,624
Jochim, Kenneth E	Epinephrine and norepinephrine on circulation	H-3360C3	36,885
Institution total, 2 grants, $41,509			
MANHATTAN			
Kansas State University of Agriculture and Applied Science			
Nevins, Ralph G	Study of the flow of blood in sheets	H-5913	10,465
Institution total, 1 grant, $10,465			
STATE TOTAL, 17 grants			212,449
KENTUCKY			
LEXINGTON			
Kentucky, University of			
Knisely, William H	Anatomy, pathology, and physiology of living lung	H-4846C1	21,759
Schweet, Richard S	Hemoglobin synthesis in a cell-free system	H-5293C1	29,555

Grantee	Project Title	Grant No.	Amount
KENTUCKY—Continued			
LEXINGTON—Continued			
Kentucky, University of—Continued			
Waugh, William H	Basal vascular tone and endotoxic hyperemia	H–6347	$7,094
Waugh, William H	do	H–6347C1	6,210
Institution total, 4 grants, $64,618			
University of Kentucky, Kentucky Research Foundation of			
Muelling, Rudolph J	Investigation into causes of sudden unexpected death	H–6710	32,000
Schweet, Richard S	Hemoglobin synthesis in a cell-free system	H–5293S1	18,792
Waugh, William H	Local control of peripheral vascular tone	H–6092	20,000
Institution total, 3 grants, $70,792			
LOUISVILLE			
Louisville, University of			
Conner, Eugene H	Lung compliance and lesser circulation after trauma	H–5349	19,977
Dallam, R. D	Localization of enzymes in mitochondrial membranes	H–2102C5S1	3,498
Dallam, Richard D	do	H–2102C6	13,848
Duncan, Charles H	Thyroid hormones and cholesterol metabolism	H–1946C6	15,180
Hall, Edmund K	Experimental studies on the embryonic heart	H–1503C7	5,290
Haller, J. A., Jr	Altered hemodynamics in mitral insufficiency	H–5750	12,598
Haller, J. A., Jr	Shunt decompression of pulmonary hypertension	H–5242C1	4,326
Holt, Joseph Paynte	Studies on the residual volume of the ventricle	H–2075C6	40,000
Hume, Walter I., Jr	Construction of accessory myocardial envelope	H–4499C2	3,806
Knoefel, Peter K	Bodily fate of substances as a basis for diagnosis	H–3639C3	2,980
Leight, Leonard	Supplementary digitalis and K-plus in severe failure	H–4558C1	5,463
Leight, Leonard	The effect of morphine on pulmonary blood volume	H–5419	19,754
Levy, Robert S	Amino acid composition of serum lipoproteins	H–3985C2	8,674
Levy, Robert S	do	H–3985C2S1	2,861
Moore, James C	Circulatory behavior of tagged erythrocytes and plasma	H–3228C3	12,305
Moore, James C	Effect of stress relaxation on lung compliance	H–3260C3	12,732
Murray, Marvin	Mechanism of intravascular clotting and thrombosis	H–5079	33,093
Pirkle, Hubert C	Serum thromboplastogenic activity	H–4932C1	17,250
Rogers, James Boyle	Toxemia of pregnancy and vascular system of uterus	H–1541C7	10,678
Rogers, James Boyle	Aging of the cardiovascular system	H–2638C4	9,890
Stevenson, Thomas D	Coagulation of blood in arteriosclerotic heart disease	H–3999C1	7,337
Swigart, Richard H	Chronic hypoxia—effect of age on adaptive responses	H–4734C1	9,143
Swigart, Richard H	do	H–4734C1S1	3,257

Grantee	Project Title	Grant No.	Amount
KENTUCKY—Continued			
LOUISVILLE—Continued			
Louisville, University of—Continued			
Tolman, Robert A	Ventricular function in heart-lung preparations	H–5619	$11, 623
Walker, Sheppard M	Metabolite and tension effects on heart automaticity	H–697C11	8, 350
Institution total, 25 grants, $319,913			
STATE TOTAL, 32 grants			455, 323
LOUISIANA			
BATON ROUGE			
Louisiana State University			
Berenson, Gerald S	Acid mucopolysaccharides of the aorta	H–2942C3S1	10, 989
Berenson, Gerald S	do	H–2942C4	31, 848
Davison, John A	Studies on the form of the elliptical red cell	H–5840	3, 680
Fox, Marjorie H	Inheritance of cardiac pathogenesis	H–5674	1, 841
Goss, Charles M	Embryology of mammalian heart	H–173C11	22, 750
Low, Frank N	Electron microscopy of blood and other tissues	H–1663C7	26, 008
McGill, Henry C., Jr	Studies of lipid metabolism in human blood vessels	H–4511C1	14, 393
Institution total, 7 grants, $111,509			
NEW ORLEANS			
Louisiana State University			
Albert, Harold M	Study of congenital and acquired cardiac lesions	H–2573C4	25, 000
Coulson, Roland A	Fluid and electrolyte studies on crocodilia	H–2062C6	16, 481
Geer, Jack C	Pulmonary hypertension and thromboembolism	H–4560C1	7, 533
Geer, Jack C	do	H–4560C1S1	7, 945
Harris, A. Sidney	Causes and control of cardiac arrhythmias	H–1109C8	10, 966
McGill, Henry C	Renal factor in necrotizing arteritis	H–1785C6	15, 352
McGill, Henry C., Jr	Pathogenesis of arterial lesions	H–655C11	40, 835
McGill, Henry C., Jr	Electron microscopy of the vascular system	H–2549C4	4, 715
McGill, Henry C., Jr	do	H–2549C4S1	13, 606
Muelling, Rudolph J	Causes of sudden and unexpected death	H–1908C6	32, 550
Skelton, Floyd R	Pathogenesis of experimental hypertension	H–3193C3	33, 420
Skelton, Floyd R	do	H–3193C3S1	14, 265
Institution total, 12 grants, $222,668			

Grantee	Project Title	Grant No.	Amount
LOUISIANA—Continued			
NEW ORLEANS—Continued			
Tulane University			
Burch, George E	Effect of tropical climates on cardiovascular system	H–143C11	$34, 160
Burch, George E	do	H–143C11S	31, 443
Burch, George E	A study of the dilated heart	H–4012C2	62, 369
Burch, George E	do	H–4012C2S1	2, 875
Creech, Oscar, Jr	Measuring myocardial blood flow in intact subject	H–2826C4	33, 350
Creech, Oscar, Jr	Extracranial arterial occlusion—joint study	H–5688	13, 024
Darby, Thomas D	Studies of drug elicited changes in cardiac dynamics	H–5987	7, 500
Dingman, Joseph F	Hormonal control of sodium and water metabolism	H–2850C4	22, 000
Dingman, Joseph F	do	H–2850C4S1	10, 700
Gardberg, Manuel	Investigation of recovery potentials of heart muscle	H–5113C1	8, 395
Goldsmith, Grace A	Blood lipid lowering effect of nicotinic acid	H–4150C2	28, 480
Goldsmith, Grace A	do	H–4150C2S1	12, 593
Hack, Marvin H	Lipids and lipoproteins of muscle	H–2564C4	8, 475
Hale, Alfred R	Studies in cerebral circulation	H–4454C1	32, 535
Hampton, John K., Jr	Plasma proteolytic behavior in response to injuries	H–3307C2	8, 158
Hibbs, Richard G	E.M. studies of the cardiovascular system	H–2490C4	18, 600
Love, William D	Regulation of regional myocardial blood flow	H–5781	18, 065
Mayerson, H. S	The physiological significance of renal lymph	H–4306C2	10, 005
Miller, James A	Intra-arterial versus intravenous injections	H–6046	7, 325
Miller, O. Neal	Metabolism of propanediol phosphate in heart muscle	H–1525C7	17, 610
Mogabgab, William J	Virus effect on the cardiovascular system	H–6002	19, 998
Norman, Tom D	The pathogenesis of cardiac hypertrophy	H–5725	23, 401
Reemtsma, Keith	A–V conduction system in congenital cardiac defects	H–3545C3	8, 040
Reemtsma, Keith	Studies of prolonged perfusion of the isolated heart	H–5638	16, 754
Schlegel, Jorgen U	Hypertension	H–4659C1	20, 125
Schlegel, Jorgen U	Renal concentration mechanism	H–4898C1	9, 363
Schramel, Robert J	Prolonged extracorporeal support of respiration	H–5637	37, 042
Threefoot, Sam A	Role of lymphatics in congestive heart failure	H–1520C7	11, 270
Waring, William W	Pulmonary diffusion in normal infants and children	H–3932C2	5, 750
Ziskind, Morton M	Alveolar-capillary block following open-heart surgery	H–4429C2	19, 631
Ziskind, Morton M	Effects of climatic changes on pulmonary function	H–4896C1	10. 350
Institution total, 31 grants, $569,386			
STATE TOTAL, 50 grants			903, 563

Grantee	Project Title	Grant No.	Amount
MAINE			
BAR HARBOR			
Roscoe B. Jackson Memorial Laboratory			
Bernstein, Seldon E	Studies of hereditary neonatal blood disorders	H–5748	$15, 065
Storer, John B	Repair rate and life span in radiation damage	H–4083C2	20, 033
Institution total, 2 grants, $35,098			
PORTLAND			
Maine Medical Center			
Nelson, Clifford V	A multichannel analyzer	H–2590C4	16, 900
Tichy, Jerome R	Na and K binding capacity of cardiac protein	H–5380C1	12, 270
Institution total, 2 grants, $29,170			
STATE TOTAL, 4 grants			64, 268
MARYLAND			
BALTIMORE			
Baltimore City Hospitals			
Brennan, James C	Study of senescence at cell level	H–4178C1	19, 435
Brennan, James C	Combined pyelonephritis and atheroma in rats	H–6013	15, 237
Brennan, James C	----do	H–6013S1	8, 339
Ravitch, Mark M	Evaluation of mitral insufficiency	H–2825C4	20, 125
Redding, Joseph S	Resuscitation in acute coronary occlusion	H–5439	29, 448
Stamey, Thomas A	Unilateral pyelonephritis and hypertension	H–4871C1	17, 215
Wilder, Robert J	Evaluation of hypothermia at levels adjacent to OOC	H–5245	23, 270
Institution total, 7 grants, $133,069			
Church Home and Hospital			
Brantigan, Otto C	Pulmonary emphysema—etiology and prevention	H–5219C1	13, 800
Institution total, 1 grant, $13,800			
College of Notre Dame of Maryland			
Mary Alma, Sister	Myocardial metabolism and functional manifestations	H–4058C1	3, 595
Institution total, 1 grant, $3,595			

Grantee	Project Title	Grant No.	Amount
MARYLAND—Continued			
BALTIMORE—Continued			
Johns Hopkins University			
Avery, Mary E	Mechanical behavior of lungs of infants and children	H-5429	$15, 725
Baker, Benjamin M	Ballistocardiograph in heart diseases	H-327C11	20, 996
Bang, Frederick E	The ultrastructure of blood vessels	H-3314C3	10, 350
Blalock, Alfred	Studies related to cardiovascular surgery	H-226C9	24, 000
Blalock, Alfred	Physiological changes using heart-lung apparatus	H-1326C6	25, 000
Blalock, Alfred	----do	H-1326C6S1	5, 750
Bueding, Ernest	Carbohydrate metabolism of smooth muscle	H-5268S1	95, 886
Bueding, Ernest	----do	H-5268C1	44, 045
Carlson, Francis D	Structural basis of cellular functions	H-3141C3S1	76, 679
Carlson, Francis D	----do	H-3141C4	26, 220
Caughey, Winslow S	Isolation, structure, and model reactions of heme A	H-6079	20, 067
Cohen, Bernice H	Inheritance of aging patterns and longevity	H-6023	28, 934
Conley, C. Lockard	Clinical disorders of blood coagulation	H-1601C12	13, 473
Conley, C. Lockard	Abnormal hemoglobins	H-2799C4	10, 189
Enns, Theodore	Molecular transport across biological barriers	H-2492C4	20, 800
Enns, Theodore	----do	H-2492C4S1	6, 583
Gantt, W. Horsley	Psychogenic stress in cardiovascular physiology	H-2844C4	13, 528
Hellegers, Andre E	Aspects of acid-base and water balance in pregnancy	H-4231C2	5, 415
Kouwenhoven, W	Effects of electricity on the heart	H-2709C4	10, 500
Kouwenhoven, W	----do	H-2709C4S1	20, 700
Lack, Leon	Metabolism of gentisic acid	H-3310C3	7, 912
Langdon, Robert G	Lipid biosynthesis and its physiological control	H-1731C7	23, 000
Lasagna, Louis	Research and training in new drug development	H-4788C2	43, 056
McKusick, Victor A	Genetics and epidemiology of coronary artery disease	H-4180C1	22, 029
McKusick, Victor A	Spectral phonocardiography	H-1485C7	9, 500
McKusick, Victor A	----do	H-1485C7SR	8, 050
McKusick, Victor A	Genetic factor in cardiovascular diseases	H-3313C3	11, 500
Medearis, Donald N	Influenza vaccine and illness in cardiac patients	H-6344	18, 325
Morgan, Russell H	Study of adult heart disease by cinefluorography	H-4171C1	15, 000
Mudge, Gilbert H	Biochemical aspects of renal electrolyte transport	H-4015C2	16, 042
Norman, Philip S	A study of the plasmin system	H-4117C2	12, 075
Ogilvie, James W., Jr	Mevalonic acid metabolism and cholesterol biosynthesis	H-4977C1	9, 500
Renzetti, Attilio D	Physio-pathologic study of chronic bronchitis	H-6005	9, 959
Riley, Richard L	Ventilation—perfusion relationships in the lungs	H-1929C5	25, 869
Ross, Richard S	Quantitative cineangiocardiography	H-5584	24, 150
Roveti, George C	Resistance and volume of the pulmonary vessels	H-4078C1	6, 325

Grantee	Project Title	Grant No.	Amount
MARYLAND—Continued			
BALTIMORE—Continued			
Johns Hopkins University—Continued			
Sabiston, David C	Coronary insufficiency and revascularization	H–2864C4	$17, 595
Spear, Gerald S	Glomerular lesions in cyanotic heart malformations	H–5605	24, 995
Talbot, Samuel A	External measurement of cardiovascular forces	H–2951C4	21, 591
Talbot, Samuel A	Network aspects of cardiovascular pulsations	H–3076C4	15, 000
Thomas, Caroline B	Fundamental physics in origin of cardiovascular sounds	H–3370C3	15, 570
Thomas, Caroline B	Precursors of hypertension and coronary artery disease	H–1891C6S1	12, 511
Turner, Thomas B	——do	H–1891C7	17, 250
Turner, Thomas B	Primate colony for specialized medical research	H–5306R1	58, 793
Walker, W. Gordon	Laboratory for neurocirculatory studies	H–6673	23, 000
Webb, George N	Hyperkalemia and hyponatremia in heart failure	H–3303C3	12, 466
Wylie, Charles M	Construction of a clinical spectral phonocardiograph	H–2923C4	19, 780
Zinkham, William H	Assessing severity of long-term illness	H–4758C1	5, 000
	Glutathione metabolism of red cells from normal newborns	H–3995C2	9, 200
Institution total, 49 grants, $1,009,883			
Levindale Hebrew Home and Infirmary			
Landowne, Milton	Identification of atheromata by selective localization	H–4376C1	26, 910
Institution total, 1 grant, $26,910			
Maryland, University of			
Armstrong, Bruce W	Metabolic and cardiorespiratory responses to exercise	H–3572C2	15, 000
Blair, Emil	Lung physiology during total cardiopulmonary bypass	H–6154	31, 674
Buxton, Robert W	Hemorrhagic shock and respiratory enzyme systems	H–2937C3	10, 000
Cowley, R. A	Cardiac resuscitation by electronic stimulators	H–4595C1	5, 659
Esmond, William G	Blood pumps, oxygenator—dialysis device	H–2618C4	15, 000
Esmond, William G	Prosthetic heart valves	H–5636	24, 689
Gonzales, Luis F	Studies on tritium-tagged digoxin	H–5511	14, 950
Gonzales, Luis F	——do	H–5511S1	8, 517
Karpeles, Leo M	Stress-strain studies of intact myocardium	H–6040	4, 000
Krahl, Vernon E	The finer structure of the mammalian lung	H–2454C4	5, 520
Linberg, Eugene I	Lung transplantation	H–5789	3, 503
Spicer, William S	Chronic bronchitis—study of day to day variation	H–5436	32, 690
Wood, Colin	Experimental glomerulonephritis and hypertension	H–5660	10, 105
Institution total, 13 grants, $181,307			
Mercy Hospital, Inc.			
Marriott, Henry J	Oxygen administration after coronary occlusion	H–4479C1	12, 919
Institution total, 1 grant, $12,919			

Grantee	Project Title	Grant No.	Amount
MARYLAND—Continued			
BALTIMORE—Continued			
Sinai Hospital of Baltimore, Inc.			
Markowitz, Milton	Streptococcal antibodies in acute rheumatic fever	H–5555	$7, 813
Nachlas, Marvin M	Experimental studies in coronary arterial insufficiency	H–3223C2	12, 000
Turner, David A	Atherosclerosis studies in primates	H–5208	11, 017
Turner, David A	Myocardial lipid patterns	H–5283C1	13, 800
Weinberg, Tobias	Histophathologic study of coronary heart disease	H–5287R1	26, 769
Wexler, Jack	Role of potassium in ventricular fibrillation	H–3265C2	11, 500
Institution total, 6 grants, $82,899			
COLLEGE PARK			
Maryland, University of			
Jones, Jack C	Morphology and physiology of insect blood cells	H–5193C1	13, 593
Lakshmanan, S	Fat metabolism of cows—butterfat and atherosclerosis	H–3936C2	13, 800
Institution total, 2 grants, $27,393			
SALISBURY			
Peninsula General Hospital			
McBeth, Charles H	Pre- and post-mortem serum enzyme determinations	H–4343C1	12, 340
Institution total, 1 grant, $12,340			
STATE TOTAL, 82 grants			1, 504, 115
MASSACHUSETTS			
BOSTON			
Beth Israel Hospital			
Zoll, Paul M	Internal electric cardiac pacemaker	H–5108C1	13, 800
Institution total, 1 grant, $13,800			
Boston Dispensary			
Schmidt, Gerhard	Chemistry and metabolism of heart phospholipids	H–3457C4	20, 010
Institution total, 1 grant, $20,010			
Boston Floating Hospital			
Fisher, John H	Heart pump oxygenator as an aid in circulatory failure	H–5456C1	11, 500
Kreidberg, Marshall	Diagnosis of cardiac shunts with catheter counter	H–6231	17, 250
Reynolds, Robert N	Anesthesia and pulmonary ventilation in infants	H–4645C1	10, 000
Institution total, 3 grants, $38,750			

Grantee	Project Title	Grant No.	Amount
MASSACHUSETTS—Continued			
BOSTON—Continued			
Boston University			
Boyd, William C	Blood group specific plant agglutinins	H-1076C8	$5, 549
Dahlen, Roger W	Circulatory arrest in profound hypothermia	H-6204	12, 000
Fulton, George P	Thromboembolism in living blood vessels	H-902C9S1	939
Fulton, George P	----do	H-902C10	21, 848
Gaensler, Edward A	Applied pulmonary physiology	H-5933	10, 663
Gaensler, Edward A	----do	H-5933C1	21, 325
Gensler, Walter J	Anticholesterol acids, EFA activity and unsaturation	H-3773C2	24, 484
Gensler, Walter J	Structures and modification of digitalis-like alkaloids	H-4141C2	13, 340
Hegnauer, Albert H	Mechanical properties of the hypothermic heart	H-4355C1	13, 270
Kiplinger, Glenn F	Autonomic reflexes and epinephrine vasodilation	H-5776	15, 000
Lionetti, Fabian J	Carbohydrate metabolism in human erythrocyte ghosts	H-5353	24, 785
Lutz, Brenton R	Hypertension and blood vessel reactivity *in vivo*	H-3087C3	26, 385
Terner, Charles	Comparative studies of vascular tissue metabolism	H-5602	18, 400
Institution total, 13 grants, $207,988			
Children's Hospital Medical Center			
Diamond, Louis K	The study of blood group antibodies	H-2405C8	39, 100
Gerald, Park S	Studies of the structure of hemoglobin	H-4706C1	29, 055
Gross, Robert E	Surgical treatment of cardiovascular abnormalities	H-623C11	40, 000
Massell Benedict F	Streptococcal disease and rheumatic fever	H-4957C1	44, 275
Monroe, Robert G	Factors affecting myocardial oxygen consumption	H-6144	15, 169
Institution total, 5 grants, $167,599			
International Cardiovascular Society			
Haimovici, Henry	Fifth Congress—International Cardiovascular Society	H-6398	6, 800
Institution total, 1 grant, $6,800			
Lahey Foundation			
Watkins, Elton, Jr	Total cardiac bypass problems during left cardiotomy	H-3803C2	17, 432
Watkins, Elton, Jr	Hemodynamics in fetal aortic pedical homotransplants	H-4692C1	10, 896
Institution total, 2 grants, $28,328			
Mallory Institute of Pathology			
MacDonald, R. A	Morphological effects of serotonin	H-3647C2	8, 960
Institution total, 1 grant, $8,960			
Mallory Institute of Pathology Foundation			
Robbins, Stanley L	Quantitative vascular injection studies on the heart	H-3790C2	17, 250
Institution total, 1 grant, $17,250			

Grantee	Project Title	Grant No.	Amount
MASSACHUSETTS—Continued			
BOSTON—Continued			
Massachusetts Eye and Ear Infirmary			
Cogan, David G	Lipid synthesis by nonadipose tissue	H-4051C2	$32, 200
Cogan, David G	----do	H-4051C2S1	13, 575
Institution total, 2 grants, $45,775			
Massachusetts General Hospitals			
Bendixen, Henrik	Pulmonary compliance and atelectasis of the lungs	H-5859	5, 864
Castleman, Benjamin	The ultrastructure of the diseased kidney	H-1834C6	27, 701
Gaston, Lamont W	*In vitro* synthesis of Stuart factor by liver	H-4610C1	15, 780
Glimcher, Melvin J	The molecular biology of mineralized tissues	H-4777C2	21, 307
Huggins, Charles E	Whole organ and animal preservation by freezing	H-5673	66, 716
Knowles, John H	Effects of aging on respiratory function	H-5583R1	21, 057
Leaf, Alexander	Mechanism of active ion transport	H-2822C4	24, 265
Linton, Robert R	Peripheral arteriosclerosis of the lower extremity	H-633C11	14, 648
Linton, Robert R	----do	H-633C11S	6, 762
Page, Lot B	Relation of catechol amines to human hypertension	H-5665	17, 094
Sweet, William H	Joint study—diagnosis of operable cerebral ischemia	H-4769C1	9, 775
Institution total, 11 grants, $230,969			
Massachusetts Memorial Hospitals			
Burrows, Belton A	Renal function studies with radioactive compounds	H-5571	20, 000
Carr, Herman E., Jr	The role of aldosterone in essential hypertension	H-5879	22, 539
Huckabee, William E	Blood flow and metabolism of the fetus in utero	H-4593C1	4, 255
Huckabee, William E	----do	H-4593C1S1	1, 897
Kinsey, Dera	Evaluation of treatment in hypertension	H-4635C1	50, 686
Levinsky, Norman G	Renal sodium excretion with regulated GFR	H-5176	11, 500
Relman, Arnold S	Replacement of tissue potassium by rubidium or cesium	H-2767C4	23, 230
Whipple, Gerald H	Production of chronic atrial tachysystole	H-4902C1	5, 980
Whipple, Gerald H	----do	H-4902C1S1	4, 312
Wilkins, Robert W	Hemodynamic and metabolic studies of hypertension	H-1536C7	45, 000
Wilkins, Robert W	Plans for joint study of anticholesterolemic drugs	H-6343	5, 000
Wilkins, Robert W	----do	H-6343S1	5, 000
Institution total, 12 grants, $199,399			
New England Medical Center			
Callow, Allan D	The use of epoxy resins for small artery anastomoses	H-5297C1	3, 507
Callow, Allan D	Collateral circulation in the ischemic extremity	H-5723	13, 198
Schwartz, William B	Regulation of electrolyte and acid-base equilibrium	H-759C10	32, 545
Institution total, 3 grants, $49,250			

Grantee	Project Title	Grant No.	Amount
MASSACHUSETTS—Continued			
BOSTON—Continued			
New England Center Hospital			
Deterling, Ralph A	Surgical and antigenic studies of heart-lung grafts	H–5373C1	$25, 932
Etsten, Benjamin	Cardio-circulatory effects of general anesthetic agents	H–1711C9	34, 436
Goldstein, Robert	Studies on prothrombin, proconvertin and PTC	H–3649C2	19, 300
Lurie, Abraham A	Venous function during anesthesia	H–6069	17, 019
Proger, Samuel	Dietary fats, plasma lipids, and blood coagulation	H–3753C2	23, 000
Rheinlander, Harold	Cardiotomy with head perfusion, asystole and hypothermia	H–3971C2	16, 272
Institution total, 6 grants, $135,959			
Peter Bent Brigham Hospital			
Dammin, Gustave J	Cardiovascular-renal transplantation research center	H–6370	109, 160
Gorlin, Richard	Heat production by heart muscle	H–5000C1	9, 200
Institution total, 2 grants, $118,360			
Retina Foundation			
Gergely, J	Biochemistry of muscle contraction	H–5949	156, 620
Gergely, J	——do	H–5949S1	4, 784
Institution total, 2 grants, $161,404			
St. Elizabeth's Hospital			
Stefanini, Mario	Biologic activity of platelet constituents	H–2132C5	14, 950
Stefanini, Mario	Pathogenesis—treatment of intravascular thrombosis	H–5698	46, 000
Institution total, 2 grants, $60,950			
Tufts University			
Attinger, Ernst O	Carotid sinus denervation in induced bronchospasm	H–4851	2, 300
Briggs, Fred Norman	Cardioactive drugs, M-B-factor, ATP and contractility	H–4228C2	16, 570
Dulfano, Mauricio	Physiologic evaluation of phlebotomy in polycythemia	H–5009C1	11, 500
Meister, Alton	Amino acid metabolism	H–2319C5	59, 404
Meister, Alton	——do	H–2319C5S1	48, 130
Ritvo, Max	Tomographic study of lung circulation in emphysema	H–5984	11, 500
Sise, Herbert S	Anticoagulants in cardiovascular disease	H–1058C9	25, 139
Wagner, Richard	Enzyme studies on WBC, platelets and glycogen storages	H–1652C13	11, 023
Institution total, 8 grants, $185,566			
CAMBRIDGE			
Bio-Research Institute, Inc.			
Bernfeld, Peter	Polyanion-lipoprotein complexes	H–3850C4	7, 913
Institution total, 1 grant, $7,913			

Grantee	Project Title	Grant No.	Amount
MASSACHUSETTS—Continued			
CAMBRIDGE—Continued			
Harvard University			
Abelmann, Walter H	Pathophysiology of collateral circulation in man	H-5217	$16, 100
Alexander, Benjamin	Disturbances in thromboplastin elaboration	H-656C10	70, 692
Andrus Stephen B	Cardiovascular disease research in primates	H-4208C2	33, 100
Barger, A. Clifford	Kidney function in experimental heart failure	H-2493C3	11, 500
Barnes Benjamin A	Homotransplantation of skeletal muscle and lung	H-6282	18, 462
Blinks, John R	Chronotropic-inotropic structure-activity relations	H-3738C2	14, 971
Bloch, Konrad E	Biosynthesis of sterols from acylic precursors	H-2477C4	24, 936
Bloch, Konrad E	do	H-2477C4S1	40, 068
Blumgart, Herrman L	Na and H_2O distribution in essential hypertension	H-1835C6	10, 700
Blumgart, Herrman L	Investigations of the aging lung	H-3795C2	11, 845
Cahill, George F., Jr	Studies of lipid release by adipose tissue	H-4569C1	13, 427
Castle, William B	Vascular component of hemostasis	H-1629C9	16, 951
Chalmers, Thomas C	Research and training in new drug development	H-4789C2	61, 287
Cook, Charles D	Normal and abnormal respiration in children	H-5339C1	33, 051
Coons, Albert H	Studies on antibody production	H-2255C5	16, 225
Coons, Albert H	do	H-2255C5S1	56, 963
Cope, Oliver	Role of thoracic duct lymph in recovery from shock	H-6283	21, 153
Dammin, Gustave J	Survival of homograft tissues	H-1771C7	19, 772
Dammin, Gustave J	do	H-1771C7S1	45, 573
Dexter, Lewis	Circulatory dynamics in diseases	H-450C11	23, 000
Edsall, John Tilest	Structure and properties of proteins and viruses	H-3169C3	37, 932
Ellis, Laurence B	Hemodynamics of cardiovascular surgery	H-442C12	9, 200
Ellis, Laurence B	do	H-442C12S	17, 365
Fellers, Francis X	Magnesium and calcium inter-relationships during growth	H-2656C4	11, 000
Fillios, Louis C	Dietary factors in experimental atherosclerosis	H-4174C1	17, 250
Fine, Jacob	Bacterial defense mechanisms in traumatic shock	H-2014C6	50, 000
Fine, Jacob	Serial determinations of blood volume	H-5547	32, 094
Frank, Howard Alvin	Increasing the blood supply of the myocardium	H-1984C6	28, 399
Freedberg, A. S	The thyroid and the heart	H-4413C1	44, 850
Gardner, Frank H	Studies of blood platelet physiology and preservation	H-5895	37, 322
Gibson, John G. 2d	Metabolism and preservation of human blood cells	H-1667C15	59, 335
Gore, Ira	Arterial ground substance and atherosclerosis	H-4110C1	15, 000
Gorlin, Richard	Circulatory dynamics and metabolic dysfunction	H-2637C4	18, 610
Gorlin, Richard	do	H-2637C4S1	14, 291
Gryska, Paul F	Intimal restoration after thrombo-endarterectomy	H-3345C3	12, 193
Harken, Dwight E	Heart valve surgery and assisted circulation	H-2419C5	24, 730
Harken, Dwight E	do	H-2419C5S1	570

Grantee	Project Title	Grant No.	Amount
MASSACHUSETTS—Continued			
CAMBRIDGE—Continued			
Harvard University—Continued			
Hellerstein, Earl E	Dietary magnesium and choline in atherosclerosis	H-3764C2	$21, 776
Krayer, Otto	Pharmacology and chemistry of veratrum alkaloids	H-2205C5	108, 298
Landis, Eugene M	Role of antidiuretic substances in heart	H-2034C5	15, 000
Lindgren, Inga	Studies of hyperventilation	H-6385	12, 445
Lown, Bernard	Psychobiologic stress and coronary artery diesase	H-4140C2	37, 552
Majno, Guido	Vascular permeability in inflammation	H-5404	6, 831
Majno, Guido	Studies in inflammation and cell death	H-6275	22, 300
Marshall, Jean M	Mechanical and electrical properties of muscle	H-5702	12, 809
Martin, Harry B	Collateral respiration and alveolar rupture pressure	H-5567	14, 615
Merrill, John P	Pathologic physiology of the uremic syndrome	H-444C11	19, 069
Merrill, John P	----do	H-444C11S	16, 870
Morrison, Robert St	Hyperlipemia in the nephrotic syndrome	H-2324C4	11, 195
Murray, Joseph E	Homotransplantation of kidneys and skin	H-2791C5	37, 630
Oncley, John L	Physical chemistry of human plasma proteins	H-2127C5	56, 373
Page, Ernest	Studies of ion fluxes in mammalian heart muscle	H-4474C2	10, 069
Portman, Oscar W	Nutrition and experimental vascular sclerosis	H-136C11	33, 249
Rutstein, David D	Lipoid deposition in aortic cells in tissue culture	H-3989C2	54, 085
Shillito, John, Jr	Joint study—diagnosis of operable cerebral ischemia	H-4766C1	9, 001
Stare, Fredrick J	Studies on lipoproteins	H-2200C5	27, 912
Stein, Myron	Physiologic effects of experimental pulmonary embolism	H-5317C1	13, 857
Talbot, Nathan B	Metabolic homeostasis in diagnosis and therapy	H-1529C7	54, 185
Vallee, Bert L	Biological role of metals	H-3117C4	109, 824
Vitale, J. J	Relationship of magnesium metabolism to atherogenesis	H-3515C3	30, 797
Waddell, William R	Carbohydrate and lipid metabolism and atherogenesis	H-4373C2	23, 000
Warren, Richard	Anticoagulants and coagulants in the postoperative state	H-2036C5	18, 763
Warren, Richard	Joint study—diagnosis of operable cerebral ischemia	H-4768C1	7, 976
Wessler, Stanford	The mechanism of serum-induced thrombosis	H-1027C6	29, 106
Wessler, Stanford	Studies in pulmonary embolism	H-3777C2	21, 999
Wessler, Stanford	Multidisciplinary study of aging and arteriosclerosis	H-6316	263, 224
Winer, Bertram M	Salt depletion and the mechanisms of hypertension	H-6119	17, 250
Woodward, Robert B	Nuclear magnetic resonance spectroscopy	H-2297C4	19, 232
Woodward, Robert B	----do	H-2297C4S1	35, 375
Zoll, Paul M	Effects of drugs in experimental chronic A–V block	H-2208C5	17, 980
Zoll, Paul M	Clinico-pathologic study of coronary artery diesase	H-4151C2	17, 783
Institution total, 71 grants, $2,197,347			

Grantee	Project Title	Grant No.	Amount
MASSACHUSETTS—Continued			
CAMBRIDGE—Continued			
Massachusetts Institute of Technology			
Collins, Samuel	Improvement and evaluation of a new pump oxygenator	H–5036C1	$14, 589
Scatchard, George	Physical chemistry of protein solutions	H–3249C3	20, 508
Institution total, 2 grants, $35,097			
Protein Foundation, Inc.			
Janeway, Charles A	Chemistry and physiology of blood proteins	H–5979	200, 000
Janeway, Charles A	Center for research upon blood	H–6302	78, 134
Institution total, 2 grants, $278,134			
SHREWSBURY			
Worcester Foundation for Experimental Biology			
Dorfman, Ralph I	Sex hormones and atherosclerosis in humans	H–1741C6	46, 000
Elmadjian, Fred	Biosynthesis of norepinephrine and related amines	H–4079C4	13, 000
Gut, Marcel	Azasteroids	H–5266	10, 000
Hess, Eugene L	Fractionation and characterization of streptococci	H–2325C6	14, 680
Pincus, Gregory	Steroid metabolism in aging men and women	H–1659C13	27, 715
Rosemberg, Eugenia	Aldosterone and metabolism of sodium and potassium	H–3928C2	19, 780
Rosemberg, Eugenia	----do----	H–3928C2S1	1, 658
Institution total, 7 grants, $133,633			
SOUTH HADLEY			
Mount Holyoke College			
Haywood, Charlotte	Respiratory response of women to carbon dioxide	H–3300C3	823
Institution total, 1 grant, $823			
STOW			
Red Acre Farm, Inc.			
Seronde, Joseph	Effect of B_6 deficiency on the heart	H–3510C3	2[illegible], 000
Institution total, 1 grant, $25,000			
WALTHAM			
Brandeis University			
Klein, Harold P	Synthesis of lipids in saccharomyces cerevisiae	H–2421C5	9, 200
Institution total, 1 grant, $9,200			

Grantee	Project Title	Grant No.	Amount
MASSACHUSETTS—Continued			
WILMINGTON			
Avco Corp.—Research and Advanced Development Division			
Hovanian, H.P	Study of new optics for intracardiac visualization	H–5038C1	$14, 801
Institution total, 1 grant, $14,801			
WOODS HOLE			
Institute for Muscle Research, Inc.			
Szent-Gyorgyi, Albert	Chemistry and physics of muscle and its contraction	H–2042C5	87, 032
Institution total, 1 grant, $87,032			
WORCESTER			
Clark University			
Martell, Arthur E	Reactions of metal ions with bio-organic compounds	H–3246C3	15, 249
Institution total, 1 grant, $15,249			
Memorial Hospital			
Robinson, Roger W	Coronary atherosclerosis	H–2658C4	18, 515
Robinson, Roger W	A multidisciplinary approach to cerebral thrombosis	H–3830C2	43, 786
Institution total, 2 grants, $62,301			
St. Vincent Hospital			
Feinsilver, Oscar	Heparin-warfarin compared in postinfarction syndrome	H–5963	2, 300
Institution total, 1 grant, $2,300			
Worcester Polytechnic Institute			
Todd, David	The biochemistry of the A-glyceryl ethers	H–5928	6, 883
Institution total, 1 grant, $6,883			
Individual Grant			
White, Paul D	Lipid metabolism	H–6636	30, 000
Institution total, 1 grant, $30,000			
STATE TOTAL, 170 grants			4, 602, 830

Grantee	Project Title	Grant No.	Amount
MICHIGAN			
ANN ARBOR			
Michigan, University of			
Barry, Alexander	A study of vascular channels in human fetal liver	H-4718C1	$9, 653
Bean, John W	Effects of atmospheric and high oxygen pressures	H-1646C11	8, 625
Bean, John W	----do	H-1646C1S1	12, 156
Beck, Lloyd	Histamine as the mediator of active vasodilatation	H-3946C2	9, 919
Bennett, Donald R	Positive inotropism of conjugated carbonyl compounds	H-3945C2	8, 216
Bohr, David F	Normal and hypertensive arteriolar smooth muscle	H-3756C3	22, 086
Burckhalter, J. H	Steroidal hormone relatives—hypotensive amines	H-5915	8, 466
Burckhalter, J. H	----do	H-5915C1	12, 458
Child, Charles G., 3d	The etiology of portal hypertension	H-4260C1S1	5, 635
Child, Charles G., 3d	----do	H-4260C2	66, 528
Elderfield, Robert	Synthesis and isolation of candidate hypotensive agents	H-4179C2	32, 760
Francis, Thomas, Jr	Epidemiology of atherosclerosis and coronary occlusion	H-2680C4	28, 750
Francis, Thomas, Jr	Epidemiology of cardiovascular disease in a community	H-4145C1S2	42, 274
Francis, Thomas, Jr	----do	H-4145C2	40, 250
Francis, Thomas, Jr	----do	H-4145C2S2	176, 009
Francis, Thomas, Jr	Center for research in diseases of the heart	H-6378	177, 826
Francis, Thomas, Jr	Community aspects of cardiac surgery	H-6750	8, 292
Hoobler, Sibley W	Renal factors in hypertensive vascular disease	H-2578C4	54, 639
Lucchesi, Benedict	Analysis of antiarrhythmic agents	H-5806	8, 073
Morris, Joe D	A simplified aortic valve prosthesis	H-5844	11, 422
Raccuglia, Giovanni	Platelets and plasma factors in thromboplastin	H-3950C2	12, 064
Spuhler, J. N	Study of secretor and ABO–H-factors in man	H-5437	20, 349
Srere, Paul A	The condensing enzyme of heart tissue	H-5328C1	11, 500
Swain, Henry H	Action of drugs upon myocardial and purkinje conduction	H-2466C4	7, 475
Wilson, James L	Oxygen transport in infants and children	H-2556C4	43, 550
Wilson, William S	Effect of intracardiac blood conductivity on EKG	H-5578	12, 685
Institution total, 26 grants, $851,660			
DETROIT			
Henry Ford Hospital			
Beher, William T	Homeostatic control of cholesterol metabolism	H-5085	13, 978
James, Jack N	Morphologic studies of the human heart	H-5197C1	6, 399
Singer, Thomas P	Biological oxidations in heart and other tissues	H-1995C6	25, 300
Institution total, 3 grants, $45,677			

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Grantee	Project Title	Grant No.	Amount
MICHIGAN—Continued			
DETROIT—Continued			
Wayne State University			
Barnhart, Marion I	Cellular systems interacting with prothrombin	H-3447C3	$15,491
Barnhart, Marion I	Cellular sites for synthesis of blood proteins	H-4712C1	13,861
Bing, Richard J	Myocardial metabolism	H-5043C2	15,900
Boyle, Albert J	Arterial S_{35} in experimental atherosclerosis	H-4543C1	8,297
Greifenstein, F. E	Physiological effects of hyperventilation	H-4393C1	16,675
Gurdjian, Elisha S	Joint study—diagnosis of operable cerebral ischemia	H-4765C1	15,081
Jacobson, Lyle F	Valvular replacement with a new spring prosthesis	H-2553C4	14,950
Jordan, Prescott, Jr	Extracranial arterial occlusion—joint study	H-5689	9,200
Keech, Madeline K	Morphologic investigation of aortic desmosomes	H-5403	8,821
Lewis, Benjamin Mar	Characteristics of the lung in heart failure	H-2379C4	14,315
Meyer, John S	Joint study—Diagnosis of operable cerebral ischemia	H-4767C1	12,362
Mizeres, Nicholas J	Innervation of the heart	H-2495C4	4,300
Muirhead, Ernest E	Renal transplants in renoprival hypertension	H-5060C1	27,784
Seegers, Walter H	Fractionation of platelets and blood coagulation	H-2026C6	12,771
Seegers, Walter H	Formation and properties of prothrombin derivatives	H-3424C3	19,550
Seegers, Walter H	Effect of drugs on blood clotting mechanisms	H-5141	21,295
Tchen, T. T	Homeostatic control of cholesterol biogenesis	H-4139C2	9,703
Institution total, 17 grants, $240,356			
ELOISE			
Wayne County General Hospital			
Bercu, Bernard	Study of myocardial blood flow and congestive failure	H-5710	8,967
Ellis, Frank R	Evaluation of group A bloods weaker than subgroup A_2	H-5325C1	9,286
Schneider, Charles	Fibrination-defibrination	H-4022C2	12,000
Institution total, 3 grants, $30,253			
LANSING			
Michigan Department of Health			
Sgouris, James T	The preparation of human urokinase	H-4978C1	15,262
Sgouris, James T	The isolation of human placental fibrinolysin	H-6194	15,020
Institution total, 2 grants, $30,282			
STATE TOTAL, 51 grants			1,198,228

Grantee	Project Title	Grant No.	Amount
MINNESOTA			
AUSTIN			
Minnesota, University of			
Lundberg, W. O	Nutritional effects of fish oil components	H-4386C1	$17, 213
Lundberg, W. O	----do	H-4386C1S1	1, 194
Institution total, 2 grants, $18,407			
MINNEAPOLIS			
Minneapolis General Hospital Research Foundation, Inc.			
Hitchcock, Claude R	Multiple channel aorto-myocardial revascularization	H-4253C2	11, 547
Johnson, Frank E	Studies to create and correct mitral insufficiency	H-4536C1	8, 640
Institution total, 2 grants, $20,187			
Minnesota, University of			
Absolon, Karel B	Surgery for congenital and acquired coronary disease	H-4099C2	14, 877
Absolon, Karel B	Experiment surgical therapy of myocardial infarction	H-5433	9, 985
Alexander, Carl S	Distribution and metabolism of 8-C_{14} aminonucleoside	H-4983C1	8, 734
Armstrong, Wallace	Chemical-physiological correlations in the heart	H-2525C4	20, 000
Baker, A. B	Degenerative cerebroarterial disease	H-5426	18, 768
Benson, Ellis S	Chemistry of muscle failure	H-1584C7	27, 512
Bernstein, Eugene F	Intravenous arteriography	H-4335C1	5, 750
Bernstein, Eugene F	----do	H-4335C1S1	6, 739
Carr, Charles W	Binding of inorganic ions with proteins	H-1618C9	8, 740
Chang, C. C	Oscillatory flow in elastic tubes and blood vessels	H-3680C2	18, 400
Cohen, Maynard M	Congenital heart disease and the nervous system	H-5013C1	24, 380
Davis, Richard B	The role of serotonin in vacterial endotoxin shock	H-5027S1	4, 381
Davis, Richard B	----do	H-5027C1	5, 500
Eichenholz, Alfred	Chronic respiratory alkalosis	H-5754	14, 904
Frantz, Ivan D., Jr	Intermediary metabolism of cholesterol	H-1875C6S1	2, 379
Frantz, Ivan D., Jr	----do	H-1875C7	14, 573
Glick, David	Quantitative histochemistry of the vascular system	H-2028C6	28, 064
Good, Robert A	A study of the chronic renal diseases of childhood	H-5662	36, 612
Good, Robert A	Immunological mechanisms for rheumatic fever	H-2085C6	35, 550
Grande, Francisco	Dietary factors and blood lipids in man	H-4401C2	23, 932
Grim, Eugene Donald	Movement of water and ions in mammalian viscera	H-2098C6	14, 490
Hinshaw, Lerner B	Effect of renal hemodynamics and age in hypertension	H-5023C1	9, 027
Holman, Ralph T	Gas chromatography isolation of lipid components	H-3559C3	14, 662
Holman, Ralph T	Preparation and biologic evaluation of pure lipids	H-3662C2	3, 450
Howard, Robert B	Cardiovascular clinical research center	H-6314	377, 600
Hunter, Samuel W	Cardiovascular surgery with pressurized environment	H-3657C2	8, 781

Grantee	Project Title	Grant No.	Amount
MINNESOTA—Continued			
MINNEAPOLIS—Continued			
Minnesota, University of—Continued			
Iannone, Anthony M	Cerebral blood flow with the dye dilution method	H-5560	$22, 114
Johnson, John A	Transport studies in the isolated perfused heart	H-5517	20, 000
Kelly, William D	Construction and evaluation of artificial heart valves	H-5183C1	12, 694
Keys, Ancel	International heart disease epidemiology	H-4697C1	23, 000
Keys, Ancel	Function and metabolism in aging man	H-4997R1	50, 000
Krivit, William	Studies in mechanisms of hemolytic anemias	H-3107C4	13, 894
Krivit, William	Studies on intravascular clotting	H-5341C1	13, 509
Lillehei, Richard C	The cause and prevention of irreversible shock	H-2941C4	25, 063
Lillehei, Walton	Direct vision intracardiac surgery	H-830C8	66, 045
Lundberg, W. O	Tissue lipids in atherosclerotic swine	H-2772C4	5, 725
Lundberg, W O	Lipid preparations for research	H-4601C1S2	11, 736
Privett, O. S	Analyses of component triglycerides and phospholipids	H-5735	19, 303
Privett, O. S	....do	H-4601C2	16, 387
Read, Raymond C	Vascular effects of hypertonic solutions	H-4287C1	13, 243
Rempel, W. E	Development of a genetically small-sized pig	H-1730C7	21, 965
Rempel, W. E	....do	H-1730C7S1	1, 857
Sautter, Jay H	Studies on aplastic and chronic hypoplastic anemia	H-4398C1	31, 809
Schlenk, Hermann	Metabolic interconversion of lipids	H-5363C1	19, 325
Schmitt, Otto H	Stereovectorelectrocardiography	H-513C11	29, 681
Simonson, Ernst	Spatial electrocardiographic vector analysis	H-2071C5	6, 383
Simonson, Ernst	Electocardiographic and constitutional correllation	H-5491	8, 188
Sundberg, Ruth D	Experimental hemosiderosis—relationship to anemia	H-4616C1	24, 150
Taylor, Henry L	Cardiac response to exercise and maximaloxygen intake	H-5858	8, 470
Taylor, Henry L	Heart disease—relation to mental and physical stress	H-3088C4	44, 850
Thal, Alan P	Myocardial revascularization	H-3258C3	15, 056
Thal, Alan P	Studies on experimental pancreatitis	H-1902C6	9, 188
Tobian, Louis	Pathogenesis of arterial hypertension	H-2008C5S1	4, 173
Tobian, Louis	....do	H-2008C6	30, 343
Tobian, Louis	....do	H-2008C6S1	14, 260
Vanbergen, Frederic	Use of portable mass gas spectrometer in surgery	H-1983C6	26, 507
Visscher, Maurice B	Heart and circulation studies	H-3212C3	27, 600
Vonkorff, Richard	Interactions of intracellular enzyme systems	H-2080C6	11, 639
Wangensteen, Owen H	Cardiovascular research	H-3115C4	24, 194
Wannamaker, Lewis W	Extracellular products of group A streptococci	H-1829C4	23, 082
Worthen, Howard G	Studies of renal tubular enzymes	H-4483C1	14, 523
Worthen, Howard G	....do	H-4483C1S1	6, 375
Institution total, 62 grants, $1,474,121			

Grantee	Project Title	Grant No.	Amount
MINNESOTA—Continued			
MINNEAPOLIS—Continued			
St. Barnabas Hospital Arteriosclerosis Research Laboratory			
Pilgeram, Laurence	Studies on the biochemistry of arteriosclerosis	H–3697C3	$19, 550
Institution total, 1 grant, $19,550			
ROCHESTER			
Mayo Association			
Brown, Arnold L	Electron microscopic study of cardiac hypertrophy	H–4856C1	13, 024
Donald, David E	Experimental surgical studies on the circulation	H–6053	27, 280
Donald, David E	Response of totally denervated heart to exercise	H–6143	14, 628
Fowler, W. S	Intrapulmonary motion and alveolar ventilation	H–3588C3	13, 349
Mason, H. L	Cholesterol metabolism and transport	H–4407C1	11, 500
Shepherd, John T	Pressure, flow and volume relationships in the lungs	H–4744C1	15, 000
Shepherd, John T	Cardiac output, blood pressure and limb blood flow	H–5883	26, 347
Spittel, John A., Jr	Thromboplastin generation in thrombo-embolic diseases	H–5008R1	10, 983
Swan, H. J	Pharmacologic agents on the pulmonary blood vessels	H–6249	16, 704
Theye, Richard A	Gas exchange during anesthesia and thoracic surgery	H–4881C1	14, 111
Wood, E. H	Cardiovascular control and compensatory responses in man	H–3532C3	46, 000
Wood, E. H	Mathematical analysis of indicator-dilution techniques	H–4664C1	8, 962
Institution total, 12 grants, $217,888			
ST. PAUL			
Charles T. Miller Hospital			
Edwards, Jesse E	Functional pathology of cardiovascular disease	H–5694C1	26, 030
Edwards, Jesse E	----do	H–5694C1S1	27, 089
Institution total, 2 grants, $53,119			
Minnesota, University of			
MacLean, Lloyd D	Myocardial revascularization and fibrillation	H–3909C2	11, 500
Waibel, P. E	Factors affecting dissecting aneurysm	H–4177C1S1	7. 655
Waibel, P. E	----do	H–4177C2	25, 463
Institution total, 3 grants, $44, 618			
STATE TOTAL, 84 grants			1, 847, 890

Grantee	Project Title	Grant No.	Amount
MISSISSIPPI			
JACKSON			
Mississippi, University of			
Allison, Fred, Jr	A rabbit ear-chamber study of acute inflammation	H-2792C5	$10, 794
Allison, Fred, Jr	Electron microscopy of leucocytic sticking	H-5827	14, 629
Armstrong, G. G., Jr	Servoanalysis of carotid baroreceptor control	H-4735C1	7, 949
Blake Thomas M	Ventilatory effects of analeptics in CO_2 retention	H-5458	9, 722
Blake Thomas M	Acute, chronic hypercapnia—pathophysiology in man	H-6234	32, 068
Briggs, Arthur H	Ca fluxes and inotropic responses	H-5151A	2, 300
Briggs, Arthur H	Transmembrane fluxes in vascular smooth muscle	H-5612	7, 475
Brunson, Joel G	Studies on experimental shock	H-4579R1	13, 386
Brunson, Joel G	Experimental cardiac fibrinoid lesions	H-4757C1	11, 863
Crowell, Jack W	Pulmonary and portal circulation in shock	H-2494C4	7, 800
Crowell, Jack W	----do	H-2494C4S1	5, 750
Fabian, Leonard W	Tolerance to hypotension during general anesthesia	H-6029	15, 824
Guyton, Arthur C	Regulatory systems of the circulation	H-337C11	24, 327
Hardy, James D	Developmental program for cardiovascular study	H-2806C4	34, 500
Hardy, James D	Further cardiovascular studies	H-6163	48, 316
Holland, W. C	Ion transport, fibrillation and transmembrane potentials	H-4265C1	13, 800
Klein, Richard L	Transmembrane fluxes and potentials in embryo hearts	H-4289C1	7, 003
Langford, Herbert G	Studies of renal pressor mechanisms	H-5857	11, 902
Langston, J. B	Studies of readjustments of blood volume	H-4736C1	8, 625
Webb, Watts R	Correlative studies of the aveolar-capillary system	H-5635	21, 570
Williams, W. L	Cardiovascular lesions in cadavers	H-5907	7, 470
Williams, W. L	Endocrine and dietary control of cardiovascular system	H-4052C2	10, 161
Institution total, 22 grants, $327,234			
STATE TOTAL, 22 grants			327, 234
MISSOURI			
COLUMBIA			
Missouri, University of			
Randall, James E	Stochastic properties of a vascular system	H-2464C4	8, 119
Schuder, John C	Electromagnetic energy transfer through chest wall	H-5854	23, 563
Zatzman, Marvin L	Renal clearance of the perfused bull frog kidney	H-5199C1	6, 788
Institution total, 3 grants, $38,470			

Grantee	Project Title	Grant No.	Amount
MISSOURI—Continued			
KANSAS CITY			
Community Studies, Inc.			
Nite, Gladys	Nursing card of congestive heart failure patients	H–4990C1S1	$3, 357
Nite, Gladys	----do	H–4990C2	57, 787
Institution total, 2 grants, $61,144			
Greater Kansas City Mental Health Foundation			
Barnes, Robert H	Carotid artery patency related to EEG foci in elderly	H–4395C1	4, 368
Institution total, 1 grant, $4,368			
KIRKSVILLE			
Kirksville College of Osteopathy and Surgery			
Denslow, J. S	Reflex and postural muscle contraction	H–1956C6	10, 067
Denslow, J. S	The vascular-neurologic clinical research center	H–6373	61, 870
Institution total, 2 grants, $71,937			
ST. LOUIS			
Institute of Medical Education and Research			
Lankford, Hal G	Synthesis of prothrombin and factor VII	H–6189	13, 018
Institution total, 1 grant, $13,018			
Jewish Hospital			
Blumenthal, Herman	Biochemical mechanisms in degradation of elastic fiber	H–2571C4	7, 072
Miller, David	The mechanism of immune hemolysis	H–5747	21, 761
Pareira, Morton D	The kinetics of plasma replacement after blood loss	H–5520	12, 362
Institution total, 3 grants, $41,195			
St. Louis University			
Brodeur, Armand E	GU and GI cine dynamics-cardio-renal relationships	H–4904C1	11, 672
Caciolo, Carlo P	Adrenal medulla in acute and chronic cardiac strain	H–5370	6, 981
Coret, Irving A	Responses of muscle to chemical agents and to light	H–4711C1	11, 500
Curran, George L	Factors influencing cholesterol biosynthesis	H–4882C2	50, 000
Goldenberg, Sidney	The cognate system in diabetic vascular disease	H–6230	5, 750
Hanlon, C. R	Cardiac function following open-heart surgery	H–3826C2	5, 750
Hanlon, C. R	Drugs—electric stimulation in complete heart block	H–5546	6, 737
Hanlon, C. R	Mechanical assistance to the failing heart	H–5819	8, 768
Hertzman, Aldrick B	Studies on the nasal blood vessels	H–3489C3	16, 675
Hertzman, Aldrick B	Circulatory responses to heat stresses	H–4939C1	24, 653
Sweet, Herbert C	Function and anatomy in emphysema and pneumoconiosis	H–3737C3	16, 942
Wegria, Rene	Causes and mechanisms of cardiac failure	H–4532C1	7, 181
Institution total, 12 grants, $172,609			

Grantee	Project Title	Grant No.	Amount
MISSOURI—Continued			
ST. LOUIS—Continued			
Washington University			
Butcher, Harvey R	Altered antigenicity of equine and bovine arteries	H-2569C4	$21, 478
Goldring, David	Studies in animals with congenital cardiac anomalies	H-3551C3	10, 727
Graham, Helen Tredw	Production, binding and actions of histamine	H-156C12	26, 236
Graham, Helen Tredw	----do	H-156C12S	6, 683
Hartroft, Walter S	Dietary induction of atheroma in rats	H-1968C6	9, 508
Hartroft, Walter S	Diet, race and myocardial infarction in St. Louis	H-3583C2	17, 770
Heptinstall, R. H	Experimental pyelonephritis and hypertension	H-6001	19, 552
Kirk, John Esben	Metabolism and diffusion in human arterial tissue	H-891C9	9, 934
Kissane, John M	Microchemical studies of juxta-glomerular cells	H-3930C2	7, 500
Lange, Robert D	Pathogenesis of anemia of chronic uremia	H-2793C4	9, 660
Lee, Kyu Taik	Coronary disease in Korean versus United States population	H-2672C4	3, 381
Moore, Carl V	Erythropoiesis and iron metabolism	H-22C14	73, 602
O'Neal, Robert M	Fats and hypertension in pyridoxine-deficiency	H-3525C3	14, 190
Ogura, Joseph H	Relationship of upper airway to pulmonary function	H-6084	22, 252
O'Neal, Robert M	Dietary induced myocardial infarction in rats	H-4089C1	44, 514
Parker, Brent M	Pulmonary vasculature in pulmonary embolism	H-5880	12, 463
Perry, H. M	Fate of hydralazine	H-5829	5, 546
Perry, H. M	Trace metals in cardiovascular diseases	H-2577C4	10, 350
Roos, Albert	Clinical and experimental research in respiration	H-82C11	30, 750
Sherry, Sol	Enzyme factors influencing intravascular fibrinolysis	H-3745C3	59, 895
Shore, Bernard	Studies on human serum lipoproteins	H-3629C3	6, 900
Smith, John R	Pulmonary vasomotion-blood flow in heart failure	H-519C11	7, 577
Smith, John R	----do	H-519C11S	5, 951
Smith, John R	Support and expansion of cardiovascular division	H-6292	79, 861
Stein, Arthur H., Jr	Methods of altering the circulation to a long bone	H-3792C2	4, 500
Strittmatter, P	A study of mammalian reductases and cytochromes	H-5514	11, 677
Ter-Pogossian, M. M	Physiological studies with radioactive oxygen-15	H-4390C1	10, 000
Tosteson, D. C	Regulation of the salt and water content of cells	H-4045C2	15, 000
Velick, Sidney F	Metabolism of individual proteins	H-2732C4	11, 500
Velick, Sidney F	----do	H-2732C4S1	22, 180
Weichselbaum, T	Steroid levels and surgical stress	H-2408C5	13, 901
Institution total, 31 grants, $605,038			
STATE TOTAL, 55 grants			1, 007, 779

Grantee	Project Title	Grant No.	Amount
MONTANA			
HELENA			
Holter Research Foundation, Inc.			
Holter, Norman J	Radioelectrocardiography	H-2614C3	$18,128
Institution total, 1 grant, $18,128			
STATE TOTAL, 1 grant			18,128
NEBRASKA			
LINCOLN			
Nebraska, University of			
Harman, Denham	Atherosclerosis—studies on pathogenesis	H-5262C1	12,745
Johnston, Robert B	The metabolism of thiol esters of amino acids	H-2970C3S1	1,115
Johnston, Robert B	----do	H-2970C4	14,695
McIntyre, William	Cardiac actions of rhodochlorin on mammalian hearts	H-1337C8	14,950
Staba, Emil	Tissue culture of plants containing cardiac glycosides	H-5308C1	5,037
Thorson, Thomas B	Fluid compartments of vertebrates	H-3134C4	3,680
Institution total, 6 grants, $52,222			
OMAHA			
Creighton University			
Baumel, Julian J	The cranial and cervical vasculature of the pigeon	H-5620	4,300
Clements, Leo P	Role of the ground substance in vascular lesions	H-3990C2	5,892
Clements, Leo P	----do	H-3990C2S1	9,596
Johnson, J. R	Effect of steroids on cardiovascular stress	H-4165C2	5,750
Kramar, Jeno	Capillary resistance and the endocrines	H-1151C8	10,115
McKain, John M	Open valvuloplasty for mitral insufficiency	H-4163C1	9,200
Institution total, 6 grants, $44,853			
Nebraska, University of			
Dunn, F. Lowell	Short distance transmission of physiological signals	H-1746C6	13,225
Dunn, F. Lowell	Design and study of two types of blood oxygenators	H-3962C2	9,487
Grissom, Robert L	Cardiovascular renal responses following influenza	H-5552S1	1,951
Grissom, Robert L	----do	H-5552C1	12,776
Jacobi, Herbert P	Lipids and lipoproteins from plasma and atheromas	H-4439C1	12,446
Institution total, 5 grants, $49,885			
STATE TOTAL, 17 grants			146,960

Grantee	Project Title	Grant No.	Amount
NEVADA (None)			
NEW HAMPSHIRE			
CONCORD			
New Hampshire State Hospital			
Siegel, Malcolm	Antiplasmin as a factor in thrombotic disease	H-4021C2	$14,835
Institution total, 1 grant, $14,835			
DURHAM			
New Hampshire, University of			
Lyle, Robert E., Jr	Molecular rearrangements of piperidine compounds	H-1713C6	9,880
Institution total, 1 grant, $9,880			
HANOVER			
Dartmouth College			
Cardozo, Richard H	Ventricular performance after cardiac surgery	H-5336C1	10,350
Copenhaver, John H	Studies on renal transport mechanisms	H-1639C7	15,295
Forster, Roy P	Cellular aspects of active transport by renal tubules	H-4457C2	8,050
Jacobs, Earl E	Physical chemistry of enzymes of specificity	H-3600C3	11,500
Kreuzer, Ferdinand	Oxygen tension in pulmonary gas exchange	H-2830C4	15,962
Noda, Lafayette	High energy phosphate transferring enzymes	H-3599C3	23,703
Nye, Robert E	Studies of the pulmonary circulation	H-3302C3	14,693
Robb, Jane S	Electrophysiological studies of contractile tissues	H-4747C1	12,555
Schroeder, Henry A	Abnormal trace metals in cardiovascular diseases	H-5076C1	30,958
Tenney, Stephen M	Inter-relationships of circulation and respiration	H-2888C4	14,375
Tenney, Stephen M	----do	H-2888C4S1	5,292
Tenney, Stephen M	Electrophysiology of invertebrate heart muscle	H-6132	14,609
Valtin, Heinz	CO_2 diuresis—the effect of CO_2 on the hypothalamus	H-6181	15,488
Institution total, 13 grants, $192,830			
STATE TOTAL, 15 grants			217,545
NEW JERSEY			
HOBOKEN			
Stevens Institue of Technology			
Stivala, Salvatore	Physical properties of heparin in biological activity	H-5943	19,550
Institution total, 1 grant, $19,550			

Grantee	Project Title	Grant No.	Amount
NEW JERSEY—Continued			
JERSEY CITY			
Seton Hall College of Medicine and Dentistry			
Butler, John J	Erythrophagocytosis and hemolytic desease in newborn	H-6047	$6, 842
Glicke, John H. Jr	Nature of protein-lipid bonds in lipoproteins	H-3560C2	5, 405
Hellums, Harper K	Drugs affecting flow and metabolism in heart	H-5483C1	11, 500
Hutcheon, Duncan E	Renal effects of substituted benzothiadiazines in man	H-5240C1	13, 513
Kahn, Arthur J	Excitation and contraction in cardiac muscle	H-4738C1	10, 603
Kalf, George F	Oxidative phosphorylation in submitochondrial extract	H-6009	16, 917
Leevy, Carroll M	Hepatic hemodynamics in portal hypertension	H-4530C1	14, 835
Opdyke, David F	Dynamic characteristics of the cardiovascular system	H-3490C2	10, 350
Institution total, 8 grants, $89, 965			
NEW BRUNSWICK			
Middlesex General Hospital			
Rosenberg, Norman	Use of the pericardial sac in cardiac resuscitation	H-5498	7, 820
Institution total, 1 grant, $7,820			
Rutgers State University			
Discher, Clarence A	Study of the photodecomposition of epinephrine	H-6114	7, 005
Fisher, Hans	Cholesterol and fatty acid metabolism in the hen	H-3178C3	6, 900
Sturke, Paul D	Cardiac output and blood pressure	H-4279C2	9, 775
Weiss, Harold S	Blood pressure and atherogenesis in the chicken	H-3513C3	8, 395
Weiss, Harold S	Cardiovascular change associated with acclimatization	H-5719	7, 935
Institution total, 5 grants, $40,010			
PASSAIC			
Beth Israel Hospital			
Wachstein, Max	Histochemical electron microscopy	H-5950	67, 665
Institution total, 1 grant, $67,665			
PRINCETON			
New Jersey Neuropsychiatric Institute			
Smith, Dewitt H	Hypertension and cholesterol—cerebrovascular lesions	H-4425C1	14, 547
Smith, Dewitt H	Force ballistocardiography—physiologic and clinical	H-1822C6	11, 500
Smith, Dewitt H	----do	H-1822C6S1	1, 083
Institution total, 3 grants, $27,130			

Grantee	Project Title	Grant No.	Amount
NEW JERSEY—Continued			
SUMMIT			
Ciba Pharmaceutical Products, Inc.			
Gaunt, Robert	Localization of substances in the nephron	H-5254C1	$9,947
Oliver, Jean	Microdissection of mammalian nephron	H-3765C3	24,657
Institution total, 2 grants, $34,604			
TRENTON			
New Jersey State Department of Health			
Bierenbaum, Marvin	Blood cholesterol and coronary heart disease	H-5905	33,700
Institution total, 1 grant, $33,700			
New Jersey Mental Health Research and Development Fund			
Bauman, John W., Jr	Endocrine influences on renal concentrating mechanism	H-6719	11,166
Institution total, 1 grant, $11,166			
STATE TOTAL, 23 grants			331,610
NEW MEXICO			
ALBUQUERQUE			
Lovelace Foundation for Medical Education and Research			
Goddard, Roy F	Pulmonary ventilation in children of preschool age	H-4000C2	9,315
Gordon, Archer S	Deep hypothermia for cardiovascular surgery	H-6511	25,000
Institution total, 2 grants, $34,315			
STATE TOTAL, 2 grants			34,315
NEW YORK			
ALBANY			
Health Research, Inc.			
Browe, John H	Diet, serum cholesterol and heart disease	H-3026C3	7,590
Institution total, 1 grant, $7,590			
Research Foundation of State University of New York			
Abildskov, J. A	Spatial data on linear time scale	H-3241C3	9,982
Auchincloss, J. H	Respiratory function in obesity	H-2800C4	14,795
Belford, Julius	Phosphorylase activity of heart muscle	H-3724C2	8,625
Caliva, Francis S	The tone of the small veins in hypertension	H-5532	16,762

Grantee	Project Title	Grant No.	Amount
NEW YORK—Continued			
ALBANY—Continued			
Research Foundation of State University of New York—Continued			
Chesley, Leon C	Body fluids in normal and toxemic pregnancy	H-1837C6	$14, 652
Dennis, Clarence	Pump-Oxygenator—Methods, effects, and clinical use	H-1011C9	35, 000
Dock, William	Effects of aging and diet on cardiovascular system	H-1250C7	12, 075
Eich, Robert H	Vascular response and catechol amine correlates	H-4707R1	12, 875
Eich, Robert H	Hemodynamics in labile hypertension	H-5531	7, 584
Enerson, Daniel M	Metabolic requirement of the heart during asystole	H-3287C3	17, 133
Farah, Alfred E	Renal transport of bases	H-2835C4	9, 430
Feldman, Harry A	Cardiovascular influenza effects	H-6003	15, 525
Frank, Lawrence	Studies of vascular physiology in living human skin	H-4192C2	6, 078
Furchgott, Robert F	Local factors influencing responses to adrenergic drugs	H-5237C1	9, 775
Glaser, Warren	The diuretic effect of pyrogens	H-2312C4	11, 500
Hellman, Louis M	Improvement of fetal heart rate meter	H-3678C2S1	13, 003
Hellman, Louis M	----do	H-3678C3	24, 104
Hennigar, Gordon R	Pulmonary arteriolar and arterial obstruction	H-4561C1	10, 350
Hoffman, Brian E	The mechanism of atrio-ventricular nodal delay	H-3916C2	10, 292
Jones, David B	The fine structure of diseased glomeruli	H-4300C2	6, 319
Kantrowitz, Adrian	Experimental construction of an auxiliary ventricle	H-5977	11, 500
Kao, Frederick F	Regulatory mechanisms in exercise hyperpnea	H-4032C7	8, 259
Kavaler, Frederic	Excitation-contraction coupling in heart muscle	H-5142C1	10, 522
Lee, Kwang S	Studies on the metabolic aspects of cardiac efficiency	H-3751C2	9, 993
Lee, Kwang S	Mechanism of action of cardiac glycosides	H-2875C4	14, 030
Lyons, Harold A	Chronic bronchitis and emphysema during exercise	H-5757	17, 000
Marsh, Walton H	Pressor polypeptides and related compounds	H-4449C2	6, 641
Muntwyler, Edward	Free amino acid content of certain tissues	H-1657C11	5, 804
Rogers, Lloyd S	Tissue oxygen studies with extracorporeal circulation	H-6052	17, 500
Roque, Augustin L	Cellular localization of C^{14} labeled CCl_4	H-4409C1	8, 500
Sawyer, Philip N	Function of blood vessel metabolism to thrombosis	H-3879C2	12, 000
Speirs, Robert S	Origin and function of eosinophils and plasma cells	H-4480C1	18, 400
Stuckey, Jackson H	Conduction studies utilizing cardiopulmonary bypass	H-4801C1	20, 000
Stuckey, Jackson H	----do	H-4801C1S1	20, 240
Tepperman, Jay	Mechanism of hypercholesterolemia in obese mice	H-3735C2	7, 245
Vanderlinde, R. E	Sex hormones and essential fatty acid deficiency	H-4567C1	9, 228
Vick, Robert L	Systemic pressure effects on ventricular arrhythmia	H-5533	7, 659
Weinberg, Sidney R	Peristalsis of ureter after surgical procedures	H-2908C4	2, 300
Wesolowski, Sigmund	Blood vessel replacement—prosthetic materials	H-3286C3	15, 000
Wesolowski, Sigmund	----do	H-3286C3S1	5, 715
Wosilatt, Walter D	Studies on the role of menadione reductase	H-3055C4	10, 228
Institution total, 41 grants, $503,623			

Grantee	Project Title	Grant No.	Amount
NEW YORK—Continued			
ALBANY—Continued			
Union University, Albany Medical College			
Beadenkopf, William	Pathological-epidemiological study of atherosclerosis	H–4130C1	$27,500
Haidak, Gerald L	Comprehensive study of experimental emphysema	H–6226	11,500
Lee Kyu Taik	Diet, Blood Lipids, and Coronary Disease in Koreans	H–6030	2,810
Powers, Samuel R	The mechanism of acute renal failure following trauma	H–4382C2	11,557
Rosenblum, Ira	Metabolic processes in heart muscle contraction	H–3139C3	8,452
Scott, Robert F	Lipids, Thrombosis, Lysis—a chemico-pathologic study	H–5189C1	38,513
Scott, Robert F	do	H–5189S1	13,365
Thomas, Wilbur A	Dietary induced myocardial infarction	H–4727C1	30,300
Thomas, Wilbur A	do	H–4727C1S1	59,041
Thomas, Wilbur A	U.S.A.-Africa study of cardiac infarcts and fibrinolysis	H–4791C1	9,890
Thomas, Wilbur A	do	H–4791C1S1	82,347
Institution total, 11 grants, $295,275			
BRONX			
Bronx Hospital			
Fischel, Edward E	Streptococcal sensitivity and inflammation	H–2144C5	17,940
Greene, Murray A	Vascular dynamics in systemic hypertension	H–4344C1	10,151
Institution total, 2 grants, $28,091			
Montefiore Hospital			
Carton, Charles A	Small vessel anastomosis applied to cerebral circulation	H–3959C2	20,000
Escher, Doris J.W	Artificially paced heart rates—cardio-renal effects	H–4666C1	13,402
Goldman, Arthur G	Electrolytes and response to therapy of hypertension	H–5100	15,870
Goldman, Arthur G	do	H–5100S1	368
Haimovici, Henry	Alterations of arterial tissue in atherosclerosis	H–3444C3	25,875
Leiter, Louis	Edema in chronic heart failure	H–35C13	30,980
Leiter, Louis	do	H–35C13S	621
Rosenblum, Robert	Renal production and disposition of ammonia in man	H–4440C1	17,595
Rosenblum, Robert	do	H–4440C1S1	185
Sachs, Bernard A	Studies of inositol phosphatide on lipid metabolism	H–3672C2	11,500
Sachs, Bernard A	do	H–3672C2S1	165
Spaet, Theodore H	Plasma Thromboplastin factor in blood coagulation	H–2442C4	12,000
Spaet, Theodore H	Hemostatic homeostasis and the cephalins	H–5415	42,665
Institution total, 13 grants, $191,226			

Grantee	Project Title	Grant No.	Amount
NEW YORK—Continued			
BROOKLYN			
Beth El Hospital			
Spain, David M	Factors concerned with coronary atherosclerosis	H–2692C4	$12, 750
Institution total, 1 grant, $12,750			
Coney Island Hospital Research Institute			
Kane, Alan A	Fat embolism	H–4549C1	9, 258
Institution total ,1 grant, $9,258			
Jewish Chronic Disease Hospital			
Rogoff, Joseph B	Preventive home maintenance and rehabilitation program	H–3957C1	65, 686
Teodoru, C. V	Studies on experimental glomerulonephritis	H–4410C1	12, 535
Institution total,-2 grants, $78,221			
Maimonides Hospital			
Feldman, Felix	Heme synthesis in hereditary anemias	H–3877C1	7, 670
Miller, Sherwood P	AHG consumption during blood coagulation	H–5147C1	9, 660
Perlmutter Martin	Chemical and histologic studies in acute azotemia	H–5451	10, 696
Institution total, 3 grants, $28,026			
BUFFALO			
Buffalo General Hospital			
Lippschutz, E. J	Fibrinolytic therapy in thrombo-embolic diseases	H–5882	28, 456
Institution total, 1 grant, $28,456			
Buffalo, University of			
Andersen, Murray N	Distribution blood flow in extracorporeal circulation	H–3720C2	15, 819
Bickelman, Albert G	Dynamic alterations following myocardial infarction	H–3886C2	11, 500
Bruck, Erika	Respiratory water loss in infants and children	H–5225	17, 167
Calcagno, Philip L	Effect of age on nephritis	H–4408C1	11, 842
Chilcote, Max E	Role of erythrocyte stroma in hemoglobin catabolism	H–2438C7	7, 364
Fopeano, John V., Jr	Effect of B-ethyl-norvaline on lipid metabolism	H–3910C2	7, 440
McIsaac, Robert J	Distribution and pharmacology of hexamethonium-C-14	H–4101C2	10, 846
Mohn, James F	Studies on the diego and miltenberger blood antigens	H–4146C2	7, 633
Mohn, James F	Universal donor transfusions in group A recipients	H–4917C1	11, 500
Mohn, James F	Studies on blood group antigens and antibodies	H–5351	30, 000
Noehren, Theodore H	Factors altering the rate of excretion of inert gases	H–2225C5	10, 114
Rodbard, Simon	Vascular modifications induced by blood flow	H–2271C5	37, 605
Schenk, Worthington	Hemodynamic alterations in vascular disease states	H–3181C3	39, 164

Grantee	Project Title	Grant No.	Amount
NEW YORK—Continued			
BUFFALO—Continued			
Buffalo, University of—Continued			
Shulman, Sidney	Splitting of fibrinogen into molecular subunits	H–1792C6	$14, 529
Shulman, Sidney	----do	H–1792C6S1	19, 171
Stewart, John D	Metabolic effects of hepatic anoxia	H–613C10	10, 000
Vance, John W	CO_2 stores in diffuse obstructive emphysema	H–5872	15, 000
Winkelstein, Warren	An epidemiologic study of blood pressure	H–4112C1	28, 204
Institution total, 18 grants, $304,898			
Health Research, Inc.			
Ambrus, J. L	Urokinase activated human fibrinolysin in thrombosis	H–4418C2	23, 539
Black, Nathan	Acquired resistance to fibrinolysin preparations	H–3784C2	7, 287
Brown, Elwyn S	Pulmonary mechanics and surface tension	H–3920C2	5, 750
Pressman, David	Nature of the antikidney antibody	H–2092C6	9, 744
Institution total, 4 grants, $46,320			
Roswell Park Memorial Institute			
Strong, Leonell C	Genetic studies of the aging process	H–2666C4	17, 604
Strong, Leonell C	----do	H–2666C4S1	5, 000
Institution total, 2 grants, $22,604			
COOPERSTOWN			
Mary Imogene Bassett Hospital			
Cannon, Joe H	Epidemiology of streptococci in preschool children	H–3917C2	12, 700
Jaretzki, Alfred	Relationship of coronary flow and cardiac metabolism	H–5580	13, 363
Mithoefer, John C	Circulatory effects of carbonic anhydrase inhibition	H–3915C2	27, 477
Mithoefer, John C	The circulatory effects of breath holding	H–5322	11, 787
Peters, Theodore, Jr	Mechanism of synthesis and secretion of serum albumin	H–2751C4	9, 775
Institution total, 5 grants, $75,102			
ELMHURST			
City Hospital at Elmhurst			
Kisch, Bruno	Electromicroscopy of cardiovascular system	H–4094C2	9, 449
Institution total, 1 grant, $9,449			
FLUSHING			
Booth Memorial Hospital			
Blaustein, Ancel	Induction of lipoid material in endothelial cells	H–5261C1	12, 952
Institution total, 1 grant, $12,952			

Grantee	Project Title	Grant No.	Amount
NEW YORK—Continued			
IRVINGTON			
Irvington House			
Feinstein, Alvan R	Prevention and sequelae of rheumatic fever	H-1595C7	$51,117
Institution total, 1 grant, $51,117			
ITHACA			
Cornell University			
Hess, George P	Structural and functional interrelationships in thrombin	H-3817C2	8,424
McCay, Clive M	Research upon aging	H-1658C13	25,242
Scheraga, Harold A	Equilibria in the fibrinogen-fibrin conversion	H-1662C8	36,030
Schneiderman, Howar	Physiology and biochemistry of insect growth	H-1887C6	11,500
Wright, Lemuel D	A new factor essential in cholesterol biosynthesis	H-4138C2	18,511
Institution total, 5 grants, $99,707			
MIDDLETOWN			
New York State Research Foundation for Mental Hygiene, Inc.			
Clynes, Manfred E	Dynamic relation between heart rate and respiration	H-4170C1	13,734
Clynes, Manfred E	----do	H-4170C1S1	575
Goldschmidt, Leonti	Thermal fragility of red cells of aged individuals	H-2521C4	6,014
Institution total, 3 grants, $20,323			
MINEOLA			
Nassau Hospital			
Mangiardi, Joseph L	Distribution of circulation in hypothermic subjects	H-5744	16,100
Ponder, Eric H	Red cell surface—interaction of proteins and lipids	H-1598C7	6,900
Institution total, 2 grants, $23,000			
NEW HYDE PARK			
Long Island Jewish Hospital			
Berkman, James I	Renal effects of nephritogenic streptococci	H-3994C2	10,375
Sawitsky, Arthur	Blood pH on the transport and deposition of bilirubin	H-6218	9,430
Institution total, 2 grants, $19,805			
NEW YORK CITY			
American Nurses Foundation, Inc.			
Johnson, Walter L	Family adjustment to crisis of cardiac disease	H-4731C1	56,559
Johnson, Walter L	-----do	H-4731C1S1	4,363
Institutional total, 2 grants, $60,922			

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Grantee	Project Title	Grant No.	Amount
NEW YORK—Continued			
NEW YORK CITY—Continued			
Beth Israel Hospital			
Antopol, William	SH effect on experimental heart and renal lesions	H-2670C4	$23, 328
Gold, Harry	Digitalis glycosides in congestive failure	H-3859C3	18, 400
Rosenthal, Robert L	Role of the clotting mechanism in blood diseases	H-1107C8S1	2, 742
Rosenthal, Robert L	-----do	H-1107C9R1	11, 787
Institution total, 4 grants, $56,257			
Columbia University			
Anderson, Helen M	Lipid complexes in thrombosis and arteriosclerosis	H-5504R1	39, 870
Bartelstone, H. J	The veins—pharmacological and physiological studies	H-5792	25, 240
Benesch, R. E	Structure and function in hemoglobins	H-5791	18, 968
Bradley, Stanley E	Cardiovascular Research Institute	H-5741R1	462, 042
Chein, Shu	The compensatory mechanisms after hemorrhage	H-6139	19, 900
Cohen, Gerald	Adrenal medullary hormones in hypertension	H-1045C9	32, 775
Copenhaver, Wilfred	Histochemistry of cardiovascular tissue	H-3252C3	5, 567
Cournand, Andre	Research in cardiopulmonary physiology	H-2001C6	75, 244
Cournand, Andre	-----do	H-2001C6S1	3, 450
Fishman, Alfred P	The pulmonary collateral blood flow in man	H-2299C4	7, 475
Gorman, John G	Glucose-6-P.D. deficiency in new Guinea indigines	H-6109	8, 050
Humphreys, G. H. 2d	Blood flow in I-V shunts, cirrhosis and portacaval shunts	H-5032C1	29, 514
Humphreys, G. H. 2d	Studies of the control of the pulmonary circulation	H-2506C4	6, 900
Kendall, Forrest E	Lipid metabolism and arteriosclerosis	H-52C13	90, 898
Laragh, John Henry	Electrolytes and hormones in edema and hypertension	H-1275C8	38, 654
Loring, William E	A correlative study of elastin and collagen from lung	H-4370C2	18, 270
Malm, James	Prosthetic replacements within the heart	H-4654C1	9, 903
Malm, James	Correction of acidosis in deep hypothermia	H-5986	23, 450
McAllister, F. F	Studies—factors altering experimental atherogenesis	H-5630	15, 525
McKay, Donald G	The Shwartzman reaction and cardiovascular disease	H-5666	61, 191
Nachmansohn, David	Enzyme mechanisms essential for heart function	H-740C10	16, 649
Nahas, Gabriel G	Acidosis and sympatho-adrenal function	H-4859C1	18, 170
Nahas, Gabriel G	The use of buffer amines in whole blood preservation	H-5506	29, 896
Papper, E. M	Cardiopulmonary function in newborn infants	H-2410C5	27, 025
Papper, E. M	Physiology and pharmacology of the analgesic state	H-3041C4	24, 380
Perera, George A	Hypertension among the relatives of hypertensives	H-4020C1S1	35, 900
Perera, George A	-----do	H-4020C2	46, 387
Phillips, Gerald B	Individual phospholipids in human serum	H-2907C4	10, 148
Phillips, Louise La	Afibrinogenemia in obstetrical patients	H-1512C7	15, 212
Ritterband, Arnold	Gonadal function and development of coronary disease	H-3529C2	22, 000

Grantee	Project Title	Grant No.	Amount
NEW YORK—Continued			
NEW YORK CITY—Continued			
Columbia University—Continued			
Root, Walter S	Physiological studies of hypoxia and hypercapnia	H-6253	$18, 689
Seegal, Beatrice C	Pathogenesis of some sequelae of streptococcal disease	H-3929C2	22, 622
Simms, Henry S	Fat deposition in arteriosclerosis	H-39C13	23, 000
Simms, Henry S	Age alterations affecting death rate	H-945C10	39, 226
Spiro, David	Investigation of disease at the cellular level	H-5906	142, 117
Vandyke, Harry B	Physiology of the neurohypophysial hormones	H-1788C6	13, 570
Walsh, John B	Investigation of blood flow measurement	H-5914	15, 000
Wangensteen, S. L	Damage to liver during hemorrhage using hypothermia	H-5372C1	12, 237
Wertheim, Arthur R	Factors influencing fat tolerance curves in man	H-2041C5	14, 950
Institution total, 39 grants, $1,540,064			
Barnard College			
Deyrup, Ingrith J	Electrolyte exchanges of kidney tissue	H-2061C6	10, 821
King, Edward J	Ionization constants of amino acids and peptides	H-1561C6	2, 875
Institution total, 2 grants, $13,696			
Cornell University			
Breslow, Esther M	Physical-chemical studies of human plasma proteins	H-2739C4	17, 099
Cliffton, Eugene E	Plasmin, fibrinolysin, treatment of coronary thrombosis	H-4211C2	16, 500
Duvigneaud, Vincent	Amino acids, polypeptides and related compounds	H-1675C5	100, 000
Hook, Edward	Shock produced by gram negative bacteremias	H-3479C2	10, 000
Horowitz, Herbert I	Intermediates of blood thromboplastin formation	H-5746	15, 582
Kellner, Aaron	Experimental cardiovascular pathology	H-1033C9	40, 250
Killip, Thomas, 3d	Transaminase activity in hemorrhagic shock	H-4694C1	13, 800
Kutt, Henn	Changes of blood proteins by iodinized contrast media	H-4872C1	19, 998
Landesman, Robert	Conjunctival circulation in human pregnancy	H-1100C9	10, 869
Luckey, E. H	Amino acids in cardiovascular renal diseases	H-4148C2	20, 850
Luckey, E. H	——do	H-4148C2S1	20, 887
Lukas, Daniel S	Quantitation of valvular regurgitation	H-3918C2	8, 000
Murphy, George E	Etiology and pathogenesis of rheumatic fever	H-1803C6	49, 944
Pitts, Robert F	Renal regulation of body fluids and electrolytes	H-814C8	31, 200
Redo, S. F	Correction of transposition—Aorta-pulmonary artery	H-4131C1	10, 925
Roberts, Jay	Pharmacologic reactivity of an ectopic pacemaker	H-1165C8	12, 427
Rubin, Albert L	Reversal of refractory edematous states	H-2054C5	8, 320
Smith, James W	Vascular patterns of skin and subcutaneous tissue	H-6000	14, 445
Thompson, David D	Cation fluxes in human erythrocytes	H-5899	11, 328
Watson, Robert	Experimental studies on Rheumatic fever	H-1138C9	27, 239
Wright, Irving S	Cerebrovascular disease, thromboembolism, atherosclerosis	H-4277C1	39, 641
Institution total, 21 grants, $499,304			

Grantee	Project Title	Grant No.	Amount
NEW YORK—Continued			
NEW YORK CITY—Continued			
Health Insurance Plan of Greater New York			
Shapiro, Sam	Incidence and prognosis of coronary heart disease	H–5794	$35,000
Institution total, 1 grant, $35,000			
Hospital for Special Surgery			
Harkin, James C	Correlated ultrastructure and function of the kidney	H–4841C1	12,000
Institution total, 1 grant, $12,000			
Institute for Advancement of Medical Communication			
Shepard, William P	Improving the practice of preventive medicine	H–5974	23,055
Welt, Issac D	Effects of drugs upon the cardiovascular system	H–6711	33,000
Institution total, 2 grants, $56,055			
Memorial-Sloan Kettering Cancer Center			
Hellman, Leon	Isotopic studies of cholesterol metabolism in man	H–2157C5	26,831
Vanamee, P	Renal function under acid and base loads	H–1641C7	11,391
Institution total, 2 grants, $38,222			
Sloan-Kettering Institute for Cancer Research			
Cliffton, Eugene E	Plasmin and myocardial infarction	H–2867C4	26,255
LaDue, John S	Reversible myocardial damage after coronary occlusion	H–1978C6	24,006
LaDue, John S	The precordial electrocardiogram during exercise	H–4886 R1	11,040
Institution total, 3 grants, $61,301			
Mount Sinai Hospital			
Friedberg, Charles	Hemodynamics and electrolytes in left heart failure	H–1152C7	12,775
Friedberg, Charles	do	H–1152C7S1	3,910
Gordon, Alvin J	Hemodynamics of the left heart	H–2168C5	7,984
Kreel, Isadore	Extracorporeal circulation in pulmonary insufficiency	H–5116S1	15,292
Kuhn, Leslie A	Extracorporeal circulation without oxygenation	H–4132C1	14,317
Kupfer, Sherman	The direct renal action of the digitalis glycosides	H–4845C1	19,113
Mautner, Willy	Morphologic and physiologic studies of renal ischemia	H–6095	18,601
Mendlowitz, Milton	The digital circulation in hypertension	H–1164C9	7,245
Mendlowitz, Milton	Metabolism and distribution of I^{131}-labeled hypertension	H–4477C1	8,740
Rosenfield, R. E	ABO erythroblastosis	H–4456C2	32,428
Schaefer, Louis E	Hypercholesteremia and atherosclerosis	H–564C11	32,430
Schaefer, Louis E	do	H–564C11S	19,297
Schaefer, Louis E	Effect of cortisone and acth on fat metabolism	H–982C9	16,364
Schlesinger, Benno	Vascular supply and angioarchitecture of human thalamus	H–3953C2	5,750
Institution total, 14 grants, $214,246			

Grantee	Project Title	Grant No.	Amount
NEW YORK—Continued			
NEW YORK CITY—Continued			
New York Medical College			
Copley, Alfred L	Coagulation and flow of blood		
Eiber, Harold B	Metabolic transformations of heparin	H-4793C1	$39, 502
Lehr, David	Therapy of experimental arteriosclerosis	H-2823C4	22, 195
Lemmon, William M	Coronary requirements in aortic valve disease	H-890C10	30, 000
Pagano, Vito V	A heart-lung machine to eliminate shunt acidosis	H-5633	13, 511
Piliero, Sam Joseph	Studies of erythropoietin	H-3504C2	2, 637
Scherf, David	Experimental studies on mechanism of cardiac arrhythmias	H-3374C3	19, 493
Slobody, Lawrence B	Normal values—lung volumes—capacities in children	H-230C11	6, 383
Wagner, Bernard M	Human and experimental connective tissue changes	H-6120	2, 300
		H-5822	31, 706
Institution total, 9 grants, $167,727			
New York University			
Baez, Silvio	Analysis of factors regulating microcirculation	H-5409	28, 313
Cabrera, Guillermo	Development of contractile proteins in embryonic heart	H-4443C1	9, 746
Cady, Lee D., Jr	Numerical analysis of the electrocardiogram	H-4929C1	11, 500
Cady, Lee D., Jr	——do——	H-4929C1S1	19, 375
Cady, Lee D., Jr	Correlations of electrocardiographic characteristics	H-5683	7, 830
Chasis, Herbert	Renal genesis of human hypertension	H-3272C3	48, 856
Fox, Arthur C	Myocardial nucleotides in congestive heart failure	H-3312C3	15, 489
Gordon, Albert S	Biological and chinical studies of erythropoietin	H-3357C3	19, 550
Hirschhorn, Kurt	A genetic and metabolic study of familial hyperlipemia	H-2202C2	36, 562
Weiner, Murray	Nutritional factors influencing blood coagulation	H-4347C1	7, 424
Wesson, Laurence G	Renal excretion of strong electrolytes	H-2172C5	10, 648
Wesson, Laurence G	——do——	H-2172C582	2, 132
Institution total, 12 grants, $217,425			
New York University Medical Center			
Bank, Norman	Factors governing the renal excretion of acid	H-5770	1, 430
Clauss, Roy H	The dynamics of partial extracorporeal circulation	H-6008	14, 605
Douglas, Gordon W	Proteolysis in the circulating blood during pregnancy	H-5873	22, 783
Farber, Saul J	Electrolytes and mucopolysaccharides in heart disease	H-1270C8	18, 211
Feigen, Irwin H	Cerebro-vascular dissection study	H-2872C4	19, 444
Filler, Juan	Study of pulmonary function in infants and children	H-3436C3	28, 865
Galdston, Morton	Alveolar lining layer—chemistry, surface properties	H-5256C1	22, 379
Gertler, Menard M	Epidemiology as related to cardiac rehabilitation	H-4035C2	34, 500
Gutstein, William H	Role of vasoconstrictor stresses in atherosclerosis	H-4887C1	12, 967
Johnson, Alan J	Thrombolysis and proteolysis in man	H-5003C1	48, 156
Kuttner, Ann G	High dosage prednisone versus aspirin in rheumatic fever	H-4634C1	10, 472

Grantee	Project Title	Grant No.	Amount
NEW YORK—Continued			
NEW YORK CITY—Continued			
New York University Medical Center—Continued			
Lazzarini, Robertson	Cholesterol metabolism of isolated arterial wall	H-2471C4	$16, 962
Lazzarini, Robertson	do	H-2471C4S1	8, 945
Lord, Jere W	The effects of intraarterial microscopic gas emboli	H-5114	13, 514
Rockstein, Morris	Some physiological aspects of aging	H-2398C4	7, 403
Rusk, Howard A	Cardiovascular problems and rehabilitation of the aged	H-3156C4	57, 500
Schrieber, Sidney S	Potassium and sodium exchange of heart muscle	H-3288C3	7, 130
Shinowara, George Y	Isolation of blood and tissue proteins	H-4843C1S1	5, 750
Shinowara, George Y	do	H-4843C2	38, 800
Smith, Homer W	Cardiovascular renal mechanisms	H-4076	18, 515
Smith, Homer W	do	H-4076S1	3, 565
Steel, J. Murray	Hydration of lean body mass in health and disease	H-1288C8	19, 377
Steel, J. Murray	Phospholipids in lipoproteins of human sera	H-1913C6	20, 731
Steel, J. Murray	Interrelationship of pressor and depressor substances	H-3097C4	21, 102
Steel, J. Murray	Interdisciplinary research on aging	H-3173C4	96, 600
Texon, Meyer	The hemodynamic factor in atherosclerosis	H-3590C2	6, 000
Wesson, Laurence G	Hydration in the renal response to vasopressin	H-6246	8, 602
Wilens, Sigmund L	Factors influencing experimental atherosclerosis	H-1088C9	11, 879
Zweifach, Benjamin	Structural and biochemical basis of microcirculation	H-2267C5	24, 150
Zweifach, Benjamin	do	H-2267C5S1	10, 000
Zweifach, Benjamin	Biologic character of vascular muscle and endothelium	H-4298C1	49, 962
Institution total, 31 grants, $680,299			
Rockefeller Institute			
Ahrens, Edward H., Jr	Dietary fat and tissue fatty acid turnover	H-2539C4	53, 857
Lancefield, Rebecca	Cellular antigens of streptococci	H-4379C1	15, 927
McCarty, Maclyn	Studies on the cell surface of group A streptococci	H-3919C2	27, 335
Palade, George E	Transport mechanisms in the wall of blood capillaries	H-5648	50, 871
Institution total, 4 grants, $147,990			
Sea View Hospital			
King, S. Edward	Renal hemodynamic factors affecting protein excretion	H-3294C2	12, 190
Institution total, 1 grant, $12,190			
St. Luke's Hospital			
Case, Robert Brown	Hemodynamics and metabolisms in coronary disease	H-2621C4	12, 098
Institution total, 1 grant, $12,098			

Grantee	Project Title	Grant No.	Amount
NEW YORK—Continued			
NEW YORK CITY—Continued			
St. Vincent's Hospital of the City of New York			
Kneisel, John J	Clinical and laboratory tests of arterial prosthetics	H-5820	$10,660
Institution total, 1 grant, $10,660			
Yeshiva University			
Angrist, Alfred A	Experimental early endocarditis	H-2190C5	29,500
Angrist, Alfred A	do	H-2190C5S1	2,300
Barnett, Henry L	Kidney function in infants and children	H-5561	17,348
Buckley, Nancy M	Cardiovascular adjustments to hemorrhage	H-3008C3R1	15,449
Claff, C. L	Aids to extracorporeal circulation in heart surgery	H-3836C2	9,585
Cresenzi, Armand A	Aids to a physiological extracorporeal circulation	H-4316C1	14,145
Daly, Marie M	Effects of hypertension on arterial metabolism	H-5143C1	17,532
Deming, Quentin B	Effect of hypertension on induced atherogenesis	H-5130C2	19,090
Eder, Howard A	Plasma lipoproteins in atherosclerosis	H-2965C4	59,066
Frank, Charles W	Pulmonary hypertension in man—some mechanisms	H-3812C2	11,500
Fujimoto, George I	Synthesis and metabolism of sitosterol	H-2818C4	10,886
Gallop, Paul M	Protein carboxyl and carboxyl-linked groups	H-4762C1	28,932
Gilman, Alfred	Studies on renal physiology	H-2329C5	20,125
Goetz, Robert H	Neurodynamic studies of the pulmonary circulation	H-3743C2	18,788
Jedeikin, Lillian A	Energy metabolism of working and nonworking hearts	H-5624	7,398
London, Irving M	Biosynthesis of heme, Globin and nucleic acids	H-2803C4	32,430
London, Irving M	Comprehensive program of research in aging	H-3838C2	177,606
Merskey, Clarence	Hypercoagulability of blood in thrombotic states	H-6191	20,412
Orkin, Louis R	Effect of resistance to breathing in anesthesia	H-2762C4	8,970
Reiner, Leopold	Study of the vascular bed of various organs	H-2542C4	13,258
Romney, Seymour L	Maternal and fetal aspects of placental circulation	H-3837C4	10,000
Romney, Seymour L	do	H-3837C4S1	19,695
Rowen, Robert	Streptococcal enzymes affecting serum lipoproteins	H-3261C3	12,714
Rudolph, Abraham M	Pulmonary hypertension and pulmonary vascular disease	H-5686	13,839
State, David	A study of collateral blood flow to the lungs in dogs	H-4248C2	26,647
Sudak, Frederick N	The effect of local factors on vascular tone	H-3563C2	3,450
White, Abraham	Hormonal regulation of lipogenesis	H-2832C4	9,585
Williams, M. H	Studies of the pulmonary circulation	H-5045C2	8,600
Williams, M. H	do	H-5045C2S1	7,985
Wittenberg, J. B	Active transport of oxygen	H-3719C3	8,450
Institution total, 30 grants, $655,285			

Grantee	Project Title	Grant No.	Amount
NEW YORK—Continued			
ROCHESTER			
Rochester General Hospital			
Soffer, Alfred	Cooperative study—heparin versus warfarin treatment	H-5962	$8,050
Institution total, 1 grant, $8,050			
Rochester, University of			
Campeti, Frank Luke	Physiologic effects of vascular contrast media	H-2784C4	40,000
DeWeese, James A	Experimental pulmonary hypertension	H-5874	10,557
Honig, Carl R	Cardiovascular function during unsteady states	H-3290C3	15,655
Kallen, Frank C	Adaptations of the bat to hibernation and flight	H-6260	6,900
Mahoney, Earle B	Resuscitation following ventricular fibrillation	H-2572C4	16,991
Marinetti, Guido V	Conjugated lipids of heart muscle	H-2063C6	20,700
McDonald, Donald F	Individual renal clearance in hypertensive patients	H-4552C1	14,600
Schenk, Eric A	Morphologic changes produced by pressor agents	H-6089	8,280
Stotz, Elmer H	Hemins and hemoproteins—structure and function	H-1322C8	14,777
Tobin, Charles E	Location and fate of experimental pulmonary emboli	H-5740	7,544
Troup, Stanley B	Role of red cell and platelet lipids in coagulation	H-4167C2	9,200
Weed, Robert I	Divalent cation metabolism in human erythrocytes	H-6241	17,601
Yu, Paul N	Pulmonary circulation and ventricular function in man	H-3966C2	27,976
Institution total, 13 grants, $210,781			
STATEN ISLAND			
Public Health Service Hospital			
Smith, William M	Cardiopulmonary hemodynamics of normals at exercise	H-5078C1	13,800
Smith, William M	U.S. Public Health Service cooperative drug study	H-5311C1	46,690
Institution total, 2 grants, $60,490			
SYRACUSE			
Syracuse University			
McFee, Richard	Instrumentation for diagnosis of heart disease	H-3949C2	7,935
Institution total, 1 grant, $7,935			
WHITE PLAINS			
St. Agnes Hospital			
Moser, Marvin	Epidemiology of hypertension	H-5617	18,894
Institution total, 1 grant, $18,894			

Grantee	Project Title	Grant No.	Amount
NEW YORK—Continued			
Individual Grant			
Wright, Irving	Cerebrovascular program development	H–6726	$10,000
Institution total, 1 grant, $10,000			
STATE TOTAL, 321 grants			6,674,684
NORTH CAROLINA			
CHAPEL HILL			
North Carolina, University of			
Arnold, John H., Sr	Cardiovascular manifestations of viral infections	H–4188C2	14,375
Brinkhous, K. M	Hemorrhage and thrombosis clinical research center	H–6350	274,549
Brinkhous, Kenneth	Antihemophilic activity of plasma	H–1648C13	45,965
Ferguson, John H	Bleeding, coagulation and related problems	H–1510C7	35,650
Glasser, Richard L	Cardiovascular activity in the decerebrate animal	H–3755C2	5,290
Gottschalk, Carl W	A mammalian micropuncture study of kidney function	H–2334C4	12,822
Gottschalk, Carl W	do	H–2334C4S1	10,350
Graham, John B	Metabolic control of antihemophilic and Stuart factors	H–1333C7	12,058
Graham, John B	Genetic control of blood coagulation	H–3140C4	22,195
Harned, Herbert S	Experimental studies of asphyxia and resuscitation	H–4688C1	16,583
Hollander, Walter	Normal and abnormal renal and body-fluid physiology	H–5155	12,109
Pennialli, Ralph	Enzymes of mitochondrial and nuclear phosphorylation	H–6088	18,000
Perlmutt, Joseph H	Effects of hormones on function of individual kidneys	H–2457C4	9,647
Peters, Richard M	Effects of hypoxia on the respiratory center	H–1257C8	10,293
Welt, Louis Gordon	Internal and external exchanges of ions and water	H–1301C8	26,087
Wood, Ernest H	Objective evaluation of lung vessels in heart disease	H–4136C1	5,170
Woods, James W	Interrelationships of pyelonephritis and hypertension	H–3794C1	11,104
Yonce, Lloyd R	Reactive hyperemia	H–3757C2	4,600
Institution total, 18 grants, $546,847.			
DURHAM			
Duke University			
Anlyan, William G	Etiology and treatment of thromboembolic disorders	H–2624C4	7,728
Anlyan, William G	do	H–2624C4S1	14,604
Anlyan, William G	Transplantability of vein grafts	H–2759C4	8,856
Anylan, William G	Studies in coronary angiography	H–3371C3	11,720
Bradsher, Charles K	Synthesis of hypotensive agents	H–2170C5	16,125
Brown, Ivan W., Jr	Prolonged gelid preservation of red blood cells	H–1226C9	19,768

Grantee	Project Title	Grant No.	Amount
NORTH CAROLINA—Continued			
DURHAM—Continued			
Duke University—Continued			
Brown, Ivan W., Jr	Studies of profound hypothermia	H–4702C1	$21, 701
Busse, Ewald W	Integrated research approach to aging	H–3582C3	172, 877
Cherny, Walter B	Serotonin levels in vascular disorders of pregnancy	H–5019C1	7, 868
De Maria, William J	Renal function studies with radio-renogram	H–6146	7, 388
Dillon, Marcus L	Hypotension from transfusions	H–4416C2	9, 366
Dillon, Marcus L	The effects of hypothermia on myocardial function	H–5640	14, 648
Eadie, G. S	Erythrocytes and permanent enzyme inhibitors	H–3028C3	14, 877
Grimson, Keith S	Surgery, drugs and diet in hypertension	H–763C8S1	5, 290
Grimson, Ketih S	----do	H–763C9	16, 222
Hackel, Donald B	Pathologic metabolic and physiologic studies of heart	H–5875	65, 532
Hackel, Donald B	Myocardial metabolism in hemorrhagic shock	H–5969	5, 973
Harris, Jerome S	Studies on surgically produced heart block	H–3549C3	15, 416
Kempner, Walter	Mechanism of dietary effects in vascular disease	H–2788C4	42, 969
Kinney, Thomas D	The effects of bacterial toxins on the myocardium	H–5968	22, 080
Kinney, Thomas D	----do	H–5968C1	37, 427
Kinney, Thomas D	Development of a department of experimental pathology	H–6299	123, 392
Kirshner, Norman	Biosynthesis of noradrenaline from hydroxytyramine	H–4206C2	11, 130
Lynn, William S	Fat metabolism and atherogenesis	H–3476C3	10, 443
Peschel, Ernst	Effect of electrolytes on heart metabolism *in vitro*	H–5900	13, 000
Postlethwait, R	Changes in clotting factors in surgical patients	H–2616C4	8, 716
Schmidtnielsen, K	Comparative physiology of salt and water metabolism	H–2228C5	23, 104
Sealy, Will C	Causes of cardiac arrest	H–1782C6	30, 202
Stead, Eugene A., Jr	Cardiovascular adjustments in health and disease	H–4807	55, 775
Stead, Eugene A., Jr	----do	H–4807S1	898
Wallace, John M	Hypertension and the sympathetic nervous system	H–5804	9, 631
Woodhall, Barnes	Planning a clinical research center	H–6317	50, 000
Zankel, Harry T	Physical modalities and peripheral blood-flow	H–4678C1	9, 370
Institutional total, 33 grants, $884,096			
WINSTON-SALEM			
Wake Forest College			
Bobb, John Richard	Studies in acute and chronic arteriovenous fistulas	H–2718C3	5, 750
Netsky, Martin G	Injection of cholesterol into arterial wall	H–4722S1	1, 046
Green, Harold D	Inter-relation of venous return and vasomotor tone	H–487C11	29, 210
Herndon, C. N	Genetic study of atherosclerosis	H–5277C1	29, 261
Lock, Frank R	Uterine blood flow and changes in pregnancy	H–3941C1	35, 897

Grantee	Project Title	Grant No.	Amount
NORTH CAROLINA—Continued			
WINSTON-SALEM			
Wake Forest University—Continued			
Lofland, Hugh B	Nutritional studies on atherosclerosis	H–4371C1S1	$7, 722
Lofland, Hugh B	----do	H–4371C2	20, 792
Meredith, Jesse H	Production and new treatment of mitral insufficiency	H–4655C1	6, 612
Meschan Isadore	Development of radioisotopic renal function tests	H–5418	20, 000
Netshy, Martin G	----do	H–4722C1	17, 192
Prichard, Robert W	Studies on spontaneous atherosclerosis	H–4352C1	29, 440
Schmid, Herman E., Jr	Renal renin in altered hemodynamic states	H–5948	17, 825
Schmid, Herman E., Jr	----do	H–5948S1	8, 855
Spencer, Merrill P	The development of a catheter-tip blood flowmeter	H–4670C1	18, 400
Spencer, Merrill P	Distribution of the cardiac output	H–2630C4	11, 500
Institution total, 15 grants, $259,502			
STATE TOTAL, 66 grants			1, 690, 445
NORTH DAKOTA			
FARGO			
North Dakota State University of Agriculture and Applied Science			
Eveleth, Donald F	Pathology associated with bovine dwarfism	H–3264C3	3, 910
Eveleth, Donald F	----do	H–3264C3S1	2, 300
Institution total, 2 grants, $6,210			
GRAND FORKS			
North Dakota, University of			
Ederstrom, Helge E	Metabolic factors in homeothermy	H–2750C4	3, 795
Institution total, 1 grant, $3,795.			
STATE TOTAL, 3 grants			10,005
OHIO			
AKRON			
Akron City Hospital			
Falor, William H	Coronary artery cannulation in open heart surgery	H–4631C1	11, 776
Institution total, 1 grant, $11,776			

Grantee	Project Title	Grant No.	Amount
OHIO—Continued			
CANTON			
Timken Mercy and Mercy Hospitals			
Huang, T. C	Retrogression in experimental arteriosclerosis	H–5171	$5, 984
Institution total, 1 grant, $5,984			
CINCINNATI			
Children's Hospital			
Kaplan, Samuel	Extracorporeal circulation—myocardial metabolism	H–2427C4	12, 650
Institution total, 1 grant, $12,650			
Cincinnati, University of			
Acheson, G. H	Active transport of cations by red cells and hearts	H–1506C7	17, 250
Braunstein, Herbert	Histochemistry of aorta in dissecting aneurysm	H–2612C4	3, 680
Braunstein, Herbert	Pathogenesis of senile cardiac amyloidosis	H–5449	10, 063
Fowler, Noble O	Physiologic effects of hypervolemia	H–3727C3	16, 554
Fowler, Noble O	Dynamics of cardiac tamponade and paradoxical pulse	H–4557C1	14, 467
Franke, Ernst K., Jr	Power spectrum analysis of the high frequency E.C.G	H–3769C2	9, 200
Glueck, Helen I	Determination of clotting factors with ninhydrin	H–2904C4	20, 327
Grupp, Gunter	Transfer of phosphate from red cells to plasma	H–4013C2	9, 200
Helmsworth, James A	Cardiac valve prostheses	H–4869C1	12, 560
Knowles, Harvey C	Water and electrolyte composition of the human kidney	H–1445C7	5, 692
Mueller, John F	Phospholipid content of human blood platelets	H–4728C1	8, 772
Somoza, Cesar	Factors influencing lipid metabolism	H–6015	2, 500
Somoza, Cesar	....do	H–6015C1	9, 126
Institution total, 13 grants, $139,391			
Jewish Hospital and Medical Center			
Miller, Benjamin F	Experimental kidney stones	H–4322C2	7, 923
Miller, Benjamin F	Clinical research center	H–6315	159, 070
Institution total, 2 grants, $166,993			
May Institute for Medical Research, Jewish Hospital and Medical Center			
Foulkes, Ernest C	Ion transport in kidney, heart and other tissues	H–3186C3	9, 480
Miller, Benjamin F	Renal excretion of sodium in arterial hypertension	H–4333C1	7, 130
Wexler, Bernard C	Severe arteriosclerosis produced by ACTH	H–3874C2	11, 500
Institution total, 3 grants, $28,110			

Grantee	Project Title	Grant No.	Amount
OHIO—Continued			
CLEVELAND			
Cleveland Clinic Foundation			
Kolff, W. J	An intrathoracic artificial heart	H-4448C2	$52, 578
Page, Irvine H	Hypertensive vascular disease	H-96C11	87, 500
Page, Irvine H	Dietary regulation of serum lipids in patients	H-3072C3	86, 975
Page, Irvine H	Diet, plasma lipids and myocardial infarction	H-6007	50, 000
Page, Irvine H	Normal subjects on vegetable oil diet—pilot study	H-6351	40, 250
Institution total, 5 grants, $317,303			
Mount Sinai Hospital			
Goldblatt, Harry	Humoral mechanisms in hypertension	H-1767C6	36, 540
Institution total, 1 grant, $36,540			
St. Vincent Charity Hospital			
Kay, Earle B	Further development of artificial heart prosthesis	H-4581C1	21, 275
Kay, Earle B	----do	H-4581C1S1	14, 000
Levy, Matthew N	Peripheral resistance to blood flow	H-3464C3	11, 500
Loyke, Hubert F	Relation between hypertension and liver disease	H-4107C2	5, 405
Institution total, 4 grants, $52, 180			
Western Reserve University			
Beck, Claude S	Operations for coronary artery disease	H-2300C5	20, 495
Berne, Robert M	Metabolic factors affecting blood flow	H-1928C4	8, 800
Bloch, Edward H	Dynamics of transcapillary exchange	H-5300	21, 400
Clowes, George H. A	Alteration of the circulation in acidosis	H-1317C8	15, 991
Eckstein, Richard W	Mechanism of cardiogenic shock	H-4156C1S1	15, 423
Eckstein, Richard W	----do	H-4156C2	15, 840
Galla, Stephen J	Effects of anesthetic agents on myocardial metabolism	H-5138C1	12, 650
Gavan, Thomas L	Electron microscopy of myocardial infarction	H-5412	17, 037
Gross, Samuel	Glycolytic pathways in erythroblastosis fetalis	H-4578C1	9, 052
Ham, Thomas Hale	Mechanism of destruction of red blood cells	H-1263C8	23, 920
Hendricks, Charles	Studies in uterine contractility	H-1914C5	19, 302
Insull, William, Jr	Lipid metabolism in human atherosclerosis	H-5284C1	13, 800
Insull, William, Jr	----do	H-5284C1S1	15, 998
Kaplan, Melvin H	Streptococcal antigens and antibodies in tissues	H-3726C3	26, 220
Kohn, Robert R	Age related changes in structural proteins	H-3123C3S1	3, 151
Kohn, Robert R	----do	H-3123C4	7, 826
Koletsky, Simon	Experimental hypertension and arteriosclerosis	H-1052C9	14, 628
Krampitz, Lester O	Synthesis of M protein by beta hemolytic streptococci	H-3291C3	26, 623
Kretchmer, Henry E	Uterine blood flow and contractility	H-5935	16, 332
Persky, Lester	Late effect of intermittent renal vascular occlusion	H-6051	17, 203

Grantee	Project Title	Grant No.	Amount
OHIO—Continued			
CLEVELAND—Continued			
Western Reserve University—Continued			
Post, Robert S	Renel filtration and reabsorption of protein	H–5276C1	$11, 500
Rammelkamp, Charles	Investigation of glomerulonephritis in Yugoslavia	H–6338	5, 117
Ratnoff, Oscar D	Studies on hemostatic mechanisms	H–1661C8	15, 128
Sancetta, S. M	Effect of heat on the circulation of man	H–4302C2	10, 402
Schneiderman, H. A	Insect respiration and metabolism	H–6320	112, 884
Share, Leonard	Electrolyte metabolism and intracellular particulates	H–1640C7	19, 517
Simeone, F. A	Study of cerebral function in relation to surgery	H–5632	23, 599
Simeone, F. A	Studies on extracranial arterial occlusion	H–5687	28, 792
Sperelakis, Nick	Conduction in the myocardium	H–5087C1	12, 820
Steinberg, Arthur G	A medico-genetic study of a human genetic isolate	H–3708C3	63, 433
Sutherland, Earl W	The action of sympathomimetic amines	H–2745C4	39, 468
Sutherland, Earl W	....do	H–2745C4S1	28, 060
Tanz, Ralph D	Steroidal cardiotonic structure-activity relationship	H–4883C2	10, 680
Travis, Randall H	Aldosterone in congestive heart failure	H–5323	14, 087
Weisberger, Austin	Occurrence of erythropoietic depression due to drugs	H–3952C2	7, 595
Weisman, Russell, Jr	Extracellular factors in red cell destruction	H–2673C4	8, 006
Institution total, 36 grants, $732,779			
COLUMBUS			
Ohio State University			
Brown, John B	Lipids of human plasma	H–2807C4	7, 762
Sirak, Howard D	A study of steroid metabolism in open-heart surgery	H–3677C2	10, 522
Tetirick, Jack E	Experimental portal hypertension	H–4640C1	11, 500
Williams, Roger D	Standard thrombus production by electric current	H–2513C4	6, 000
Williams, Roger D	Effect of hypotension in obstructive jaundice	H–3742C2	6, 900
Institution total, 5 grants, $42,684			
Ohio State University Research Foundation			
Ackerman, G. Adolph	Hemopoiesis—a histochemical and cytological study	H–4061C2	10, 508
Beal, Jack L	An investigation of ornithogalum umbellatum	H–3673C2	15, 935
Dodd, Matthew C	Erythrocyte antigen modification by bacterial factors	H–6124	11, 126
Hitchcock, Fred A	Respiratory control in hypoxia and excerise	H–3741C2	15, 000
Johnson, Ralph M	The biochemical role of the essential fatty acids	H–5473	22, 694
Ogden, Eric	Cardiac and vascular effects of shed blood	H–4665C1	8, 512
Sapirstein, Leo A	Cardiac output by conductivity dilution	H–3009C2	9, 994
Sapirstein, Leo A	Cardiac output and organ blood flow in shock	H–4730C1	18, 587
Schieve, James F	Mapping renal blood flow	H–4518C1	11, 089

Grantee	Project Title	Grant No.	Amount
OHIO—Continued			
COLUMBUS—Continued			
Ohio State University Research Foundation—Continued			
Sirak, Howard D	Metabolism in the hypothermic bypassed heart	H-5273C1	$15,000
Smith, Charles R	Ventricular depolarization in heart malformations	H-5627	37,879
Stacy, Ralph W	Arterial pulse wave velocity in absence of reflection	H-3446C3	17,355
Stow, Richard W	Thermometric measurement of tissue blood flow	H-2976C4	15,398
Warren, James V	The factors determining cardiac output in man	H-6414	16,269
Institution total, 14 grants, $225,346			
KENT			
Kent State University			
Golding, Lawrence A	Effects of exercise on serum adult cholesterol levels	H-5357	7,475
Institution total, 1 grant, $7,475			
STATE TOTAL, 87 grants			1,779,211
OKLAHOMA			
ENID			
St. Mary's Hospital			
Shideler, Alfred M	Electrophoretic studies of blood cells	H-5096C1	7,526
Institution total, 1 grant, $7,526			
OKLAHOMA CITY			
Oklahoma Medical Research Institute			
Alaupovic, Petar	Composition and structure of serum lipoproteins	H-6221	12,650
Ells, H. A	Metabolic effects of cinchona and related alkaloids	H-1561C6	9,153
Furman, Robert H	Endocrine-nutritional-lipid interrelationships	H-2528C4	68,000
Wolf, Stewart	Metabolism and life stress in cardiac patients	H-5645	18,370
Institution total, 4 grants, $108,173			
Oklahoma, University of			
Allison, John E	Ascorbic acid and arteriopathy	H-5094C1	2,937
Bird, Robert M	Histochemistry of splenic connective tissue	H-3486C3	15,065
Campbell, Gilbert S	Blood pH changes on cardiovascular mechanisms	H-4106C2	16,700
Furman, Robert H	Research in the cardiovascular field	H-1889C5	26,620
Gunn, Chesterfield	CNS integrative mechanisms in cardiovascular control	H-3111C4	12,000
Hammarsten, James F	Renal excretion of magnesium	H-3521C2	8,070

Grantee	Project Title	Grant No.	Amount
OKLAHOMA—Continued			
OKLAHOMA CITY—Continued			
Oklahoma, University of—Continued			
Jaques, William E	Pathophysiology of lesser circulation	H-3235C3S1	$30, 673
Jaques, William E	----do	H-3235C4	12, 075
Lhotka, John F., Jr	Polysaccharides in human degenerative diseases	H-1907C6	5, 030
Smith, Paul W	Factors which modify the actions of digitalis	H-3585C3	5, 750
Williams, G. R	Regional blood flow during extracorporeal circulation	H-4293C2	12, 621
Wolf, Stewart	Lipoprotein studies during stress	H-2204C5	21, 956
Wolf, Stewart	Cardiovascular clinical research center	H-6286R1	199, 547
Institution total, 13 grants, $369,044			
STATE TOTAL, 18 grants			484, 743
OREGON			
CORVALLIS			
Oregon State University			
King, Tsoo E	Reconstitution of electron transport systems	H-4852C1	4, 652
Newburgh, Robert W	Electron transport patterns in biological systems	H-2967C4	8, 366
Institution total, 2 grants, $13,018			
EUGENE			
Oregon, University of			
Hill, Terrell L	Statistical thermodynamics in biology	H-3149C3	17, 747
Wolfe, Raymond G., Jr	Heart malic dehydrogenase mechanism studies	H-3226C3	11, 388
Wolfe, Raymond G., Jr	----do	H-3226C3S1	8, 392
Institution total, 3 grants, $37,527			
PORTLAND			
Medical Research Foundation of Oregon, Inc.			
Griswold, Herbert E	Epidemiology of cardiovascular defects in the Eskimo	H-5919	14, 145
Pickering, Donald E	Operation of a regional subhuman primate research center	H-5129C1	1, 060, 724
Pickering, Donald E	----do	H-5129C1S2	61, 690
Pickering, Donald E	----do	H-5129C1S3	210, 390
Pickering, Donald E	Subhuman primate research center	H-5690S2	136, 509
Pickering, Donald E	----do	H-5690S3	280, 670
Seaman, Arthur J	Evaluation of treatments for thromboembolic disease	H-5878	17, 250
Shubeck, Frank	Fetal and uterine physiology by electronics	H-5931	21, 090
Institution total, 8 grants, $1,802,468			

Grantee	Project Title	Grant No.	Amount
OREGON—Continued			
PORTLAND—Continued			
Oregon, University of, Medical School			
Bacon, Robert L	Embryology of microcirculatory function in the mouse	H–4608C1	$3, 645
Baird, David W	Cardiovascular clinical research center	H–6336	800, 000
Dotter, Charles T	Applied hemodynamics in cardiovascular radiology	H–3275C3	20, 000
Dotter, Charles T	....do	H–3275C3S1	5, 000
Griswold, Herbert E	Biodynamics of the ballistocardiogram	H–2151C5	10, 465
Lentini, Eugene A	Bioenergetics of cardiac muscle	H–4562C1	8, 855
McCawley, Elton L	Therapy of cardiac arrhythmias	H–2233C5	16, 946
Niles, Nelson R	Coronary disease—injection—perfusion study	H–3496C2	8, 475
Ross, Benjamin B	Influence of bronchial tree structure on ventilation	H–4142C2	11, 500
Swank, Roy Laver	A study of blood viscosity	H–2676C4	41, 369
Tatum, Howard J	Adrenal pathology in preeclampsia-eclampsia	H–4269C2	20, 843
Institution total, 11 grants, $947,098			
Portland, University of			
Grossman, Charles M	Study of life span of human blood platelets	H–5501	8, 464
Institution total, 1 grant, $8, 464			
STATE TOTAL, 25 grants			2, 808, 575
PENNSYLVANIA			
BRYN MAWR			
Bryn Mawr Hospital			
Strumia, Max M	Preservation of red cells	H–974C10	23, 978
Strumia, Paul V	Freezing of platelets and measure of their function	H–4866C1	8, 640
Institution total, 2 grants, $32,618			
DANVILLE			
Geisinger Memorial Hospital and Foss Clinic			
Sieracki, Joseph C	Biologic effects of ingested dihydrocholesterol	H–5910	45, 392
Institution total, 1 grant, $45,392			
HAVERFORD			
Haverford College			
Loewy, Ariel G	Studies on the formation of insoluble fibrin	H–4385C2	12, 650
Institution total, 1 grant, $12,650			

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Grantee	Project Title	Grant No.	Amount
PENNSYLVANIA—Continued			
NORRISTOWN			
Norristown State Hospital			
Geiger, Walton B.	Enzymes linking transacetylation and transmethylation	H–5729	$9,000
Institution total, 1 grant, $9,000			
PHILADELPHIA			
Albert Einstein Medical Center			
Berkowitz, Donald	Radioactive fat absorption patterns	H–3976C2	16,509
Goldberg, Harry	Technics for correction of septal defects	H–5400C1	13,029
Kimbel, Philip	Pulmonary vascular resistance	H–5536	16,707
Roth, Karl L.	The role of heparin in immunological processes	H–1919C6	13,800
Institution total, 4 grants, $60,045			
Children's Hospital			
Djerassi, Issac	Effects of phosphatides on blood and blood vessels	H–5826	13,383
Harris, T. N.	Rheumatic fever and antibody formation	H–4598C1	83,529
Rashkind, William J.	Evaluation of an extracorporeal oxygenator	H–5845	7,257
Rashkind, William J.	Regulation of circulation during open heart surgery	H–6156	11,160
Institution total, 4 grants, $115,329			
Franklin Institute of the State of Pennsylvania			
Busser, John H.	Instrument to measure cardiac regurgitation and output	H–4143C1	9,200
Institution total, 1 grant, $9,200			
Hahnemann Medical College and Hospital			
Bender, Sheldon R.	Hemodynamic alterations during open heart surgery	H–4250C1	8,740
Bender, Sheldon R.	....do	H–4250C1S1	14,625
Bender, Sheldon R.	Intimal injury and serum lipids in atherogenesis	H–5659	10,752
Cander, Leon	Bronchodilator effects—mechanics and ventilation	H–5569	19,577
Di Palma, Joseph R.	Use of sympathomimetic amines in myocardial ischemia	H–5545	19,550
Di Palma, Joseph R.	Mechanisms of arrhythmias during coronary occlusion	H–3813C2	6,325
Dreifus, Leonard	Ventricular depolarization in cardiopulmonary bypass	H–5759	12,692
Howard, John M.	Studies of vascular surgery and peripheral circulation	H–4182C2	40,000
Imbriglia, Joseph E.	Morphogenesis of atherosclerosis and cardiac infarction	H–3789C2	5,985
Lehman, J. Stauffer	Cardiac and coronary artery opacification studies	H–3801C2	12,420
Lehman, J. Stauffer	....do	H–3801C2S1	11,500
Levy, Howard A.	Vitamin B6 deficiency in congestive heart failure	H–3770C1	4,370
Likoff, William	Sustained nonmanual hydraulic cardiac massage	H–5852	15,778
Lisan, Philip	Regulation of fat metabolism using antienzyme drugs	H–4565C1	4,485
Mason, Daniel	Low frequency analysis of heart sounds	H–4365R2	8,004

Grantee	Project Title	Grant No.	Amount
PENNSYLVANIA—Continued			
PHILADELPHIA—Continued			
Hahnemann Medical College and Hospital—Continued			
Mills, Lewis C	Reactivity of vascular adrenergic receptors	H-4394C1	$6, 124
Nichols, Henry T	Open surgical approaches to mitral valve	H-4907R1	11, 988
Novack, Paul	A study of cardiocerebral circulatory relationships	H-5453C1	17, 940
Satinsky, Victor P	Augmentation of myocardial function	H-6721	21, 771
Scott, John C	Effect of hypoxia upon coronary vascular resistance	H-3815C2	13, 228
Scott, John C	Hormonal influences on myocardial fatty acid uptake	H-4619C1	7, 533
Spitzer, John J	Removal and mobilization of lipids	H-3130C4	34, 689
Spitzer, John J	Lipemia clearing factor in fat metabolism	H-3131C4	17, 365
Spitzer, John J	Immunological aspects of atherosclerosis	H-5263	21, 505
Truex, Raymond C	Innervation and denervation studies of the heart	H-3816C2	14, 720
Truex, Raymond C	Venous drainage of the heart	H-4753C1	20, 930
Institution total, 26 grants, $382,596			
Institute for Cancer Research			
Lange, Kurt	Nicotinic acid therapy in peripheral arteriosclerosis	H-4005C2	15, 443
Institution total, 1 grant, $15,443			
Jefferson Medical College of Philadelphia			
Allen, Arthur	Lipogenesis from glucose in the intact rat	H-5468	9, 396
Chase, Harold F	Bronchial humidity in endotracheal anesthesia	H-3344C3	11, 960
Chase, Harold F	Intrathoracic pressures and intracranial circulation	H-4033C2	8, 987
Ersley, Allan J	Humoral and Feedback mechanisms of erythropoieses	H-4612C1	17, 480
Gibbon, John H., Jr	Cardiopulmonary function during surgical operations	H-3349C3	17, 278
Gibbon, John H., Jr	Homeostasis during cardiopulmonary bypass	H-4486C2	24, 472
Gibbon, John H., Jr	Changing stored blood to approximate fresh blood	H-5169C1	17, 020
Gibbon, John H., Jr	The effect of airway pressure on pulmonary blood flow	H-5191C1	7, 641
Kazal, Louis A	Fractionation of plasma coagulants and anticoagulants	H-3544C3	10, 982
Keitel, Hans G	Physiology and pathology of sickle cell disease	H-3282C3	14, 289
Merklin, Robert	The role of reversed asymmetry in visceral defects	H-5787	7, 829
Merklin, Robert J	Functional significance of adrenal venous patterns	H-4594C1	5, 827
Michels, Nicholas A	Varied blood supply of the lower abdominal organs	H-5480	13, 000
Templeton, John Y	Study of profound hypothermia	H-5334C1	19, 987
Tocantins, L. M	Expansion of research in a hematological center	H-6374	67, 067
Tsaltas, Theodore T	Alterations of lipoproteins by nonionic detergents	H-4175C1	5, 400
Tsaltas, Theodore T	Effect of intravenous papain on coagulation mechanism	H-4613C1	6, 095
Tsaltas, Theodore T	Papain induced lipemia and its long term effects	H-5647	8, 050
Weiss, Arthur J	Platelet storage with preservation of function	H-4201C2	13, 177
Institution total, 19 grants, $285,937			

Grantee	Project Title	Grant No.	Amount
PENNSYLVANIA—Continued			
PHILADELPHIA—Continued			
Lankenau Hospital			
Chung, Anthony C	Arterial metabolism of glycerol-containing lipids	H–5601	$17, 101
Horvath, Steven M	The influence of body temperature on various organisms	H–4190C2	16, 100
Institution total, 2 grants, $33,201			
Mary Bailey Foundation for Heart and Great Vessel Research			
Bailey, Charles P	Research in defibrillation and aortic insufficiency	H–5101C1	28, 750
Institution total, 1 grant, $28,750			
Misericordia Hospital			
French, Gordon N	Influences of rate and rhythm on cardiac contraction	H–5812	11, 155
Sweeney, Richard	The influence of the liver upon renal hypertension	H–6107	8, 165
Institution total, 2 grants, $19,320			
Pennsylvania, University of			
Batson, Oscar V	The functions of the vertebral vein system	H–4325C2	7, 475
Bluemle, Lewis W	Basic studies of hemodialysis mechanism and design	H–4380C2	6, 696
Chance, Britton	Magnetic changes during fast biochemical reactions	H–3038C4	12, 218
Clark, John Kapp	Studies in renal pathologic physiology	H–405C11	29, 439
Crosley, Archer P	The weight of kidney *in vivo*	H–4263C2	10, 954
Davies, R. E	The energy source for contraction of muscle	H–2520C4	19, 605
Detweiler, D. K	Comparative cardiovascular studies unit	H–4885C1	129, 963
Detweiler, D. K	....do	H–4885C1S1	35, 162
Dohan, F. Curtis	Specific c–21 steroid metabolites in hypertension	H–922C10	19, 860
Dripps, Robert D	Studies on general anesthetic agents in man	H–4589C1	40, 084
Dubois, Arthur B	A body plethysomgraph for survey of airway obstruction	H–4797C1	12, 000
Elkinton, J. Russell	Electrolyte disturbances in cardiorenal desease	H–340C11	39, 668
Flick, John A	The mechanism of acute glomerulonephritis	H–4992C1	14, 827
Flick, John A	....do	H–4992C1S1	6, 747
Forster, Robert E	Measurement of rates of gas uptake by human red cells	H–4108C2	12, 032
Gammon, George D	Carotid and vertebral artery disease	H–4893C1	14, 205
Geselowitz, David B	Quadrupole components of the human electrocardiogram	H–5861	26, 465
Gurin, Samuel	Biosynthesis and fate of cholesterol and fatty acids	H–1532C7	77, 408
Haugaard, Niels	Carbohydrate metabolism of heart and brain	H–1813C6	25, 772
Holling, H. E	Blood pressure-flow relationships in human limbs	H–4303C1	13, 223
Karush, Fred	Antibody, streptococcal, and other proteins	H–6293	42, 856
Karush, Fred	....do	H–6293S1	47, 487
Kay, Calvin F	Research in cardiovascular disease	H–5139	67, 626
Kay, Calvin F	Cardiovascular clinical research center	H–6352	653, 709

Grantee	Project Title	Grant No.	Amount
PENNSYLVANIA—Continued			
PHILADELPHIA—Continued			
Pennsylvania, University of—Continued			
Kuo, Peter T	Study of plasma lipid fatty acid patterns	H-5541	$16, 879
Luchi, Robert J	Intracellular site of action of digitalis	H-5663	10, 236
Marsh, Julian B	Plasma lipoprotein metabolism	H-5285	2, 300
Nemir, Paul, Jr	A study of the enzymatic digestion of blood	H-4630C1	15, 486
Nemir, Paul, Jr	Studies on pulmonary embolism	H-4855C1	10, 217
Norris, Robert F	Thymol turbidity test for viral hepatitis carriers	H-4220C2	5, 560
Penneys, Raymond	Skin blood flow and skin oxygen in the human digit	H-4906C1	10, 802
Peskin, Gerald W	Studies in cirrhosis, ascites, and the hepatic circulation	H-2757C4	13, 909
Peterson, Lysle H	Studies of cardiovascular hemodynamics and its regulation	H-3481C3	18, 147
Price, Henry L	Circulation as modified by general anesthetic agents	H-1568C6S1	11, 385
Price, Henry L	do	H-1568C7	24, 532
Reynolds, Monica	Measurement of blood flow through the mammary gland	H-4121C2	5, 750
Roberts, Brooke	Extracranial arterial occlusion—joint study	H-5213C1	13, 234
Sayen, John J	Studies of regional and widespread myocardial ischemia	H-398C11	18, 837
Schwan, Herman P	Electrical properties of biological materials	H-1253C8	38, 884
Schwan, Herman P	Heart wall motion studies with ultrasound	H-3882C2	13, 522
Sloviter, Henry A	Erythrocyte lipids and cellular permeability	H-6108	14, 729
Starr, Isaac	Measure of Myocardial function by BGG	H-625C11	12, 889
Timmis, Hilary H	Subcoronary aortic valvular prosthesis	H-5876	7, 751
Institution total, 43 grants, $1,630,530			
Philadelphia General Hospital			
Bellet, Samuel	Research and training in new drug development	H-4790C2	48, 300
Feinberg, Leonard J	Fate of I^{131} and C^{14} labeled triglycerides in humans	H-4153C2	9, 225
Kershbaum, Alfred	Smoking and nicotine effects on blood lipids	H-5989	6, 900
Lewis, David H	The regulation of venous return	H-2559C4	6, 900
Penneys, Raymond	Skeletal muscle metabolism in ischemic limbs	H-5001C1	11, 500
Sandberg, Herschel	Inhibitors of plasmin and plasminogen activators	H-5279C1	16, 100
Institution total, 6 grants, $98,925			
Philadelphia General Hospital Research Fund			
Bellet, Samuel	Electrolyte alterations	H-141C12	19, 972
Institution total, 1 grant, $19,972			
Philadelphia Textile Institute			
Edman, Thomas	Fabric reinforcements and grafts for prosthesis	H-6081	14, 150
Institution total, 1 grant, $14,150			

Grantee	Project Title	Grant No.	Amount
PENNSYLVANIA—Continued			
PHILADELPHIA—Continued			
Presbyterian Hospital			
Attinger, Ernst O	Pulmonary edema	H-5024C1	$10,000
Davila, Julio C	The measurement of circulatory volumes	H-1712C6	25,000
Dow, James W	Shock-like state occurring in heart-lung bypass	H-4232C2	50,000
Meltzer, Lawrence E	The effects of heparin in coronary disease	H-5965	8,740
Institution total, 4 grants, $93,740			
St. Christopher's Hospital for Children			
Fleisher, Daniel S	Role of streptococci in the etiology of nephrosis	H-5215R1	7,935
McElfresh, Arthur E	Coagulation during the newborn period	H-4936C1	13,282
Institution total, 2 grants $21,217			
Temple University			
Evans, J. D	Effect of hyperscholesteremia on tissue fatty acids	H-4910C1	18,400
Evans, J. D	Dietary, hormonal factors in cholesterol deposition	H-5106	8,165
Lautsch, E. V	Vascular morphology and atherosclerosis	H-5016C1	9,028
Lynch, Peter R	Caval flow by 250 f.p.s. X-ray cine	H-4752C1	7,015
Mann, David E	Factors in development of l-arterenol tachyphylaxis	H-4283C1	3,335
Ohler, Edwin A	The adrenals and smooth and cardiac muscle responses	H-3875C2	9,200
Oppenheimer, M. J	Effects of radiopaque media	H-4540C1	7,992
Oppenheimer, Morton	The antifibrillatory agent mephentermine	H-1878C6	5,238
Oppenheimer, Morton	Diagnostic value of intravascular gas	H-1883C6	6,966
Sevy, Roger Warren	Responses of normals and hypertensives to stresses	H-2846C4	9,500
Wiedeman, Mary P	Activity of small veins as an aid to venous return	H-2880C5	5,305
Intitution total, 11 grants, $90,144			
Wistar Institute of Anatomy and Biology			
Kritchevsky, David	Dietary effects on cholesterol metabolism	H-3299C3	25,000
Kritchevsky, David	Lipid metabolism studies in primates	H-5209	13,678
Institution total, 2 grants, $38,678			
Woman's Medical College of Pennsylvania			
Harris, H. W	Acetylation mechanisms in certain vascular diseases	H-6281	17,011
Swaine, Charles R	Cardiac and vascular actions of pressor amines	H-5291C1	7,723
Institution total, 2 grants, $24,734			
Zoological Society of Philadelphia			
Christian, John J	Research and training program in comparative pathology	H-4759C1	65,791
Ratcliffe, Herbert	Arterial disease, inactivity and population density	H-1979C6	51,000
Institution total, 2 grants, $116,791			

Grantee	Project Title	Grant No.	Amount
PENNSYLVANIA—Continued			
PITTSBURGH			
Carnegie Institute of Technology			
Bugliarelle, George	Phase separation effects on the flow of blood	H–5557	$17,272
Institution total, 1 grant, $17,272			
Children's Hospital of Pittsburgh			
Fetterman, George H	A study of immature kidneys by microdissection	H–4808C1	11,232
Fetterman, George H	----do	H–4808C1S1	4,973
Institution total, 2 grants, $16,205			
Elizabeth Steel Magee Hospital			
Taylor, Paul M	Pulmonary capillary permeability	H–6135	8,797
Institution total, 1 grant, $8,797			
Mellon Institute of Industrial Research			
Erdos, Ervin G	Properties of the urinary polypeptide substance Z	H–4592C1	16,100
Institution total, 1 grant, $16,100			
Pittsburgh, University of			
Braude, Abraham I	Experimental pyelonephritis	H–3220C4	25,277
Buckley, Joseph P	Mechanism of action of antihypertensive compounds	H–3475C2	15,444
Ciocco, Antonio	Heart disease among steel mill workers	H–4096C2	24,150
Fisher, Bernard	Physiologic effects of prolonged hypothermia	H–2065C6	11,288
Fisher, Bernard	Metabolism and fate of potassium as cardioplegic agent	H–4181C2	14,950
Hanig, Martin	Erythrocytic structure	H–2789C4	12,397
Hatch, Theodore	Respiratory impairment from low phosgene exposures	H–2327C5	21,169
Iyengar, Raja M	Actin from normal and failing hearts	H–4908C1	8,231
Kurtz, Stanley M	Fine-structural changes in the nephrotic kidney	H–4833C1	11,721
Lamy, Francois	Physical characterization of the enzyme elastase	H–2975C4	15,863
Lansing, Albert I	Cytologic changes in aging	H–2560C4	41,375
Lewis, Jessica H	Blood coagulation and hemorrhagic disease	H–2254C5	20,000
Lewis, Jessica H	Platelet life-span and platelet transfusions	H–3036C3	18,002
Magovern, George J	Leaflet advancement to control mitral insufficiency	H–4134C2	6,325
Moses, Campbell	Serum lipoprotein changes in outpatients	H–3079C4	9,989
Olson, Robert E	Mode of action of digitalis on the heart	H–1422C8	59,013
Olson, Robert E	Effect of weight reduction upon serum lipids	H–2258C5	22,568
Olson, Robert E	Electronmicroscopy of cardiac muscle	H–6211	15,945
Robin, Eugene D	Quantitative studies—cerebral and pulmonary function	H–5059C1	21,822
Shapiro, Alvin P	Psychophysiologic mechanisms in hypertensive disease	H–5711	23,000
Stock, Aaron H	Antigens of group A streptococci and rheumatic fever	H–3205C3	37,395

Grantee	Project Title	Grant No.	Amount
PENNSYLVANIA—Continued			
PITTSBURGH—Continued			
Pittsburgh, University of—Continued			
Swartwout, Joseph R	The developing physiology of the fetal heart	H-5482C1	$7,820
Wells, William W	Interrelationships of different sterols	H-2458C4	19,605
Wells, William W	do	H-2458C4S1	5,549
Wells, William W	do	H-2458C4S2	8,693
Zugibe, Frederick T	Study of human arteries, aging and atherosclerosis	H-6056	14,020
Institution total, 26 grants, $491,611			
Presbyterian Hospital			
Moran, T. J	Experimental pulmonary edema	H-2960C4	12,000
Institution total, 1 grant, $12,000			
Western Pennsylvania Hospital			
Cartwright, Robert	Pathophysiology of cardiopulmonary bypass	H-6318	15,410
Institution total, 1 grant, $15,410			
SAYRE			
Robert Packer Hospital			
Liddle, Harold V	A possible etiologic basis of pulmonary hypertension	H-5866	17,980
Institution total, 1 grant, $17,980			
UNIVERSITY PARK			
Pennsylvania State University			
Davis, David E	Pathology of diffuse nephrosclerosis in woodchucks	H-4836C1	20,076
Herzog, Leonard F	Isotopic analysis of carbon-13 labelled cholesterol	H-6319	6,300
Jordan, Joseph	Voltammetry of oxygen and carbon dioxide	H-2342C4	16,387
Patton, Stuart	Gas chromatographic analysis of fats	H-3632C2	10,350
Rose, Arthur	High temperature preparative vapor chromatography	H-5074C1	31,050
Institution total, 5 grants, $84,163			
WILKES-BARRE			
Wilkes College			
Cohen, Sheldon G	Experimental cardiovascular sensitization	H-3890C2	6,325
Institution total, 1 grant, $6,325			
STATE TOTAL, 179 grants			3,884,225

Grantee	Project Title	Grant No.	Amount
RHODE ISLAND (None)			
SOUTH CAROLINA			
CHARLESTON			
South Carolina Medical College			
Bernthal, Theodore	Hypoxic-hypercapnic interaction sites in respiration	H-5542	$13,524
Boyle, Edwin, Jr	South Carolina cardiovascular disease in ethnic groups	H-4040C3	28,658
Gazes, Peter C	Warfarin versus Heparin in acute myocardial infarction	H-5973	7,935
Groom, Dale	Cardiovascular sounds and coronary disease	H-4085C1	13,386
Knisely, Melvin H	Pathologic circulatory physiology, analytic studies	H-4176C2	63,480
Mahaffey, John E	Surgical anesthesia and myocardial contractility	H-5348C1	15,000
McIver, Forde A	Enzyme histochemistry	H-6209	15,801
Parker, Edward F	Effects of cardiopulmonary bypass on heart function	H-3468C3	9,430
Prattthomas, Harold	Atherogenesis—early lesions and role of antibodies	H-2648C4	9,200
Richardson, James A	Epinephrine blood levels and cardiovascular changes	H-1846C6	14,317
Smythe, Cheves M	Relation of toxemia to the emergence of hypertension	H-5889	26,370
Thrower, Wendell B	Mechanical assisted circulation in heart failure	H-4419C1	20,700
Walton, Robert P	Changes in heart contractile force *in situ*	H-40C13	8,625
Institution total, 13 grants, $246,426			
CLEMSON			
Clemson Agricultural College			
Huffman, John W	Substances related to the cevine alkaloids	H-5706	4,140
Huffman, John W	——do	H-5706C1	5,303
Institution total, 2 grants, $9,443			
STATE TOTAL, 15 grants			255,869
SOUTH DAKOTA			
VERMILLION			
South Dakota, State University of			
Read, W. O	Role of taurine in heart-antifibrillatory potential	H-6044	6,210
Institution total, 1 grant, $6,210			
STATE TOTAL, 1 grant			6,210

Grantee	Project Title	Grant No.	Amount
TENNESSEE			
KNOXVILLE			
East Tennessee Tuberculosis Hospital			
Peirce, E. Converse	Differential hypothermia using a pump-oxygenator	H–2315C4	$21, 366
Institution total, 1 grant $21,366			
Tennessee, University of			
Goodall, McChesney	Radiation and sympathomimetic amines	H–4309C2	15, 000
Goodall, McChesney	Urinary noradrenaline in neurogenic hypertension	H–4310C2	13, 064
Goodall, McChesney	Fluorometric determination of adrenaline and noradrenaline	H–4311C2	17, 721
Stall, Bernard G	Electrolyte metabolism of smooth muscle	H–4460C1	12, 190
Institution total, 4 grants, $57,975			
MEMPHIS			
Lipid Research, Inc.			
Bragdon, Joseph	Support of Journal of Lipid Research	H–5680C1	39, 698
Institution total, 1 grant, $39,698			
Memphis State University			
Folden, Dewey B., Jr	Renal blood flow in the decapsulated kidney	H–5431	850
Institution total, 1 grant, $850			
Tennessee, University of			
Ackerman, Robert F	Effect of intravenous cholesterol emulsion injections	H–5356C1	14, 024
Barlow, George	Physiological study of hyperpyrexia	H–1798C6	10, 141
Brody, Daniel A	An advanced study of heart-lead relationships	H–1362C8	28, 750
Culbertson, James W	Renal hemodynamics related to general circulation	H–5684	25, 000
DiLuzio, Nicholas	Reticulo-endothelial involvement in lipid metabolism	H–5367C1	27, 255
Diggs, Lemuel W	The clotting mechanism in sickle-cell crises	H–4584C1	14, 648
Erickson, Cyrus C	Serial pathologic study of renal disease in children	H–5326R1	9, 217
Etteldorf, James N	Hypertension in acute nephritis	H–454C11	18, 919
Kraus, Lorraine M	Study of the synthesis of abnormal human hemoglobins	H–3546C3	13, 845
Murphey, Francis	Joint study—diagnosis of operable cerebral ischemia	H–4778C1	13, 912
Nash, Clinton B	Vasopressin alteration of cardiovascular reactivity	H–4505C1	11, 016
Pate, James W	Intracardiac prosthetic materials	H–4863C1	12, 804
Sheppard, C. W	A critical study of circulatory mixing	H–3665C3	17, 596
Spurr, Gerald B	Cardiovascular reactivity throughout thermal spectrum	H–3488C2	8, 343
Tuttle, Arliss H	Basic and clinical studies of abnormal hemoglobins	H–1380C7	15, 167
Zilversmit, Donald	The function of plasma phospholipids	H–1238C8	16, 922
Zilversmit, Donald	Studies in fat metabolism and experimental atherogenesis	H–2181C5	30, 705
Institution total, 17 grants, $288,264			

Grantee	Project Title	Grant No.	Amount
TENNESSEE—Continued			
NASHVILLE			
Meharry Medical College			
Thomas, John	Study of some precursors of hypertension	H-3896C3	$6,900
Institution total, 1 grant, $6,900			
Vanderbilt University			
Auditore, Joseph V	Estimation and purification of the plasminogen activator	H-4135C2	7,762
Brockman, Stanley K	Hemodynamics and reflex control of the blocked heart	H-4862C1	10,178
Brockman, Stanley K	do	H-4862C1S1	4,634
Burrus, Roger B	Experimental toxemia	H-5808	2,000
Collins, Harold A	Myocardial replacement	H-5206C1	18,000
Collins, Harold A	Pulmonary function following ischemia of the lung	H-5489	11,245
Collins, Harold A	Circulatory bypass of the right ventricle	H-5523	17,735
Collins, Harold A	Vasomotor tone during extracorporeal circulation	H-5790	18,235
Dale, W. A	Study of experimental lateral patch arterioplasty	H-6070	9,541
Foster, John H	Renal effect of lower abdominal aortic cross-clamping	H-5519	12,000
Foster, John H	Experimental studies of portal hypertension	H-5524	18,090
Foster, John H	Hepatic hemodynamics in portal hypertension	H-6016	16,431
Hartmann, Robert C	Cellular enzyme defect in nocturnal hemoglobinuria	H-3509C3	27,330
Hartmann, Robert C	do	H-3509C3S1	5,750
Killen, Duncan A	Toxicity of angiographic contrast media	H-5886	12,000
Lequire, Virgil S	Responses of the vascular system to embolization	H-1570C7	18,110
Lequire, Virgil S	do	H-1570C7S1	21,125
Mann, George V	The pathogenesis of atherosclerosis in primates	H-3926C2	30,240
Mann, George V	Heart disease, diet and lipid metabolism in pygmies	H-5651C1	16,861
Meng, H. C	Clearing factor, lipid metabolism and atherogenesis	H-4372C1	12,650
Newman, Elliot V	Amino acid metabolism in cardiovascular renal disease	H-4720C1	29,637
Post, Robert L	Ion-pump in the erythrocyte	H-1974C6	14,547
Quinn, Robert W	A study of rheumatic and nonrheumatic families	H-3955C2	15,664
Ramsey, Lloyd H	Diffusion properties of pulmonary membrane	H-2798C4	11,399
Schull, Lawrence G	Cardiac function during cyclopropane anesthesia	H-4198C1	10,192
Scott, Henry W., Jr	A study of mechanical factors in atherogenesis	H-3047C3S1	6,000
Scott, Henry W., Jr	do	H-3047C4	32,088
Scott, Henry W., Jr	Studies on induced cardiac arrest in cardiac surgery	H-3348C3	15,309
Stahlman, Mildred	Pulmonary membrane disease in infants	H-1833C6	7,454

Grantee	Project Title	Grant No.	Amount
TENNESSEE—Continued			
NASHVILLE			
Vanderbilt University—Continued			
Stahlman, Mildred	Cardiovascular status in hyaline membrane disease	H–4632C1	$11, 750
Stahlman, Mildred T	....do	H–4632C1S1	133, 015
Stephenson, Sam E	Physiological P wave cardiac stimulator	H–4433C1	17, 250
Institution total, 32 grants, $594,222			
STATE TOTAL, 57 grants			1, 009, 275
TEXAS			
AUSTIN			
Texas, University of			
Oliver, Clarence P	Significance of red blood cell glutathione in humans	H–4516C1	20, 450
Institution total, 1 grant, $20,450			
CANYON			
West Texas State College			
Cooper, William A	Effect of nutrition on congenital heart abnormalities	H–4062C1	8, 918
Institution total, 1 grant, $8,910			
COLLEGE STATION			
Texas Agricultural and Mechanical College			
Reiser, Raymond	Variation in deposition and catabolism of fatty acids	H–3539C2	22, 470
Institution total, 1 grant, $22,470			
DALLAS			
Baylor University Medical Center			
Race, George J	Effect of electrolytes and hormones on the adrenal gland	H–5069C1	9, 260
Institution total, 1 grant, $9,268			
J. K. and S. L. Wadley Research Institute and Blood Center			
Prager, Morton D	Effect of enzymes on human erythrocyte serology	H–5587	12, 874
Institution total, 1 grant, $12,874			

Grantee	Project Title	Grant No.	Amount
TEXAS—Continued			
DALLAS—Continued			
St. Paul Hospital			
Mitchel, Ben F	Acid base balance in perfusions with controlled pCO_2	H–4575C1	$9,652
Mitchel, Ben F	Prevention of hypothermic ventricular fibrillation	H–5821	11,250
Institution total, 2 grants, $20,902			
Texas, University of			
Ashworth, Charles T	Correlated studies of liver cells in lipid metabolism	H–5120C1	17,250
Blackmore, William	Effect of drugs on renal function and metabolism	H–1836C6	7,762
Bonte, Frederick J	Processing of blood pool scan data	H–5181C1	2,582
Chapman, Carleton B	Studies on ventricular function. A cine-X-ray approach	H–3701C2	27,600
Chapman, Carleton B	Human adaptation to environmental and exercises stress	H–6296	41,133
Combes, Burton	Splanchnic hemodynamics and splanchnic metabolism	H–3439C2S2	6,521
Combes, Burton	....do	H–3439C3	19,366
Eisenberg, Seymour	Plasma volume as determined with I^{131}-labeled PVP	H–5165	11,500
Ernst, Richard W	Construction of prosthetic mitral valves	H–6050	14,000
Grollman, Arthur	Isolation of hypotensive principle from renal extracts	H–4124C2	11,500
Grollman, Arthur	....do	H–4124C2S1	10,000
Johnson, Robert L	Clinical studies on lung circulation and gas exchange	H–3967C2	8,280
Miller, William F	Lung gas exchange and oxyhemoglobin dissociation	H–5167C1	17,492
Pritchard, Jack A	Studies of hematologic changes in pregnancy	H–2516C4	13,196
Vanatta, John C	NA^{24} metabolism studies in hypertension	H–1574C7	10,590
Wilson, Hugh E., 3d	Tolerance of the heart to prosthetic aortic valves	H–3108C4	23,115
Wilson, Russell H	Pulmonary diffusion tests	H–2153C5	10,000
Institution total, 17 grants, $251,887			
GALVESTON			
Texas, University of			
Blount, Raymond F	Tolerance and susceptibility to salt	H–2657C4	7,384
Celander, David R	Biosynthesis and use of SE-75 proteins as tracers	H–5916	17,076
Cunningham, A	Physiopathologic responses in heart tissue culture	H–2249C5	34,919
Guest, M. M	Hematologic factors in hypothermia	H–6238	43,924
Guest, M. M	Clotting and lysing factors in the aging process	H–3717C2	11,949
Hall, Charles E	Age modification of endocrinologic and stress reactions	H–4327C1	12,075
Hall, Charles E	Endocrine influence on survival of erythrocytes	H–2703C3	7,914
Leonard, James J	Drug induced circulatory changes in hyperthyroidism	H–5803	16,127
Mills, Gordon C	The physiological degradation of hemoglobin	H–2579C4	8,625
Swann, H. G	The internal circulations of different organs	H–6142	9,657
Weissler, Arnold M	Ventricular ejection studied by simplified technics	H–5855	17,765
Institution total, 11 grants, $187,415			

Grantee	Project Title	Grant No.	Amount
TEXAS—Continued			
HOUSTON			
Baylor University			
Alexander, James K	Circulatory studies in pulmonary emphysema	H-3006C4	$12,737
Crawford, E. S	Joint study—diagnosis of operable cerebral ischemia	H-4763C1	53,330
Creech, Billy G	Lipid composition of human atherosclerotic lesions	H-5049C1	9,890
Debakey, Michael E	Observation of cardiovascular surgery technic	H-6690	8,625
Debakey, Michael E	Cardiovascular surgical investigations	H-3137C3S1	1,000
Debakey, Michael E	-----do	H-3137C4	26,926
Fields, William S	Central services, cerebral insufficiency—joint study	H-6298	48,516
Hoff, Hebbel E	Cardiovascular and respiratory action of nalline	H-4821C1	6,354
Huggins, Russell A	Fluid shifts in hemorrhage and overtransfusion	H-3863C2	7,000
Pruitt, Raymond D	Cardiovascular research center—Baylor University	H-5435	262,500
Pruitt, Raymond D	-----do	H-5435S1	129,500
Vick, Robert L	Effect of systemic pressure on ventricular arrhythmia	H-6707	4,600
Institution total, 12 grants, $570,978			
Methodist Hospital			
Feldman, Gerald L	The relation of lipoprotein lipase to atherosclerosis	H-5230C1	11,466
Institution total, 1 grant, $11,466			
Texas, University of—M. D. Anderson Hospital			
Bergsagel, Daniel E	Activating purified prothrombin by blood thromboplastin	H-4125C2	6,530
Institution total, 1 grant, $6,530			
SAN ANTONIO			
Southwest Foundation for Research and Education			
Feith, Edward F	Communication of advisors with heart research group	H-3259C3	3,450
Feith, Edward F	Workshop conference of the atherosclerosis research group	H-3405C4	5,750
Groover, Marshall E	Endocrine influence—experimental atheromatous lesion	H-6161	41,973
Hahn, J. W	Blood coagulation and thrombosis	H-3617C3	17,135
Werthessen, N. T	Functions of aorta and kidney maintained *in vitro*	H-1910C6	58,989
Werthessen, N. T	Initiation and support of a colony of baboons	H-3834C2	61,985
Institution total, 6 grants, $189,282			
STATE TOTAL, 55 grants			1,312,432

Grantee	Project Title	Grant No.	Amount
UTAH			
SALT LAKE CITY			
Latter Day Saints Hospital			
Mortensen, J. D	Extracorporeal perfusion of the near-term fetus	H-4691C1	83, 450
Mortensen, J. D	An intrathoracic cardiac prosthesis	H-4648C1	2, 400
Nelson, Russel M	Effects of ataractic drugs on coronary blood flow	H-5677	14, 558
Warner, Homer R	Regulating cardiac stroke volume with analog computer	H-3607C3	43, 898
Institution total, 4 grants, $64,306			
Utah, University of			
Bergman, Norman A	Alterations of pulmonary function during anesthesia	H-5786	13, 493
Burdette, Walter J	Cardiovascular study unit	H-4537C1	23, 000
Burdette, Walter J	Metabolism of cardiac muscle during arrest	H-4622C1	11, 500
Carnes, William H	Cardiovascular studies on copper deficient swine	H-5609	18, 406
Eyring, Henry	Kinetic studies of active transport	H-3039C4	10, 810
Harvey, Rodney B	Kidney function at low temperature	H-2134C5	18, 818
Hecht, Hans H	The pathogenesis of brisket disease	H-4299C2	23, 000
Jones, Russell S	Mucopolysaccharides in rheumatic-like lesions	H-1842C6	15, 640
Linker, Alfred	Structure and function of mucopolysaccharides	H-6080	13, 200
Loehning, Robert W	Action of anesthetics on cyclic 3-, 5-amp levels	H-5678	14, 309
Plaut, Gerhard W. E	Intermediary metabolism in heart muscle	H-3891C3	15, 468
Roberts, David G	Social group work in treatment of cardiac patients	H-4726S1	5, 946
Roberts, David G	----do	H-4726C1	9, 739
Institution total, 13 grants, $193,329			
STATE TOTAL, 17 grants			257, 635
VERMONT			
BURLINGTON			
Vermont, University of			
Abajian, John, Jr	Cardiovascular effects of halothane anesthesia	H-5512	26, 944
Bouchard, Richard E	Adaptation of gas chromatograph to clinical studies	H-3320C2	7, 475
Coon, Robert W	Studies on purified blood coagulation factors	H-3519C3	10, 417
Dunihue, Fred W	Fine structure of glomeruli and purkinje fibers	H-5946	48, 174
Jacobson, Julius H	Factors in the develpoment of collateral circulation	H-5158C1	19, 435
Jacobson, Julius H	Microvascular surgery	H-5894	21, 902
Kusserow, Bert K	A permanently indwelling intracorporeal blood pump	H-5033C1	10, 948
Lepeschkin, Eugene	Significance of cardiac after-potentials	H-1486C7	21, 195
Raab, Wilhelm	Neurohormonal imbalance and heart diseases	H-2169C4	41, 856

Grantee	Project Title	Grant No.	Amount
VERMONT—Continued			
BURLINGTON—Continued			
Vermont, University of—Continued			
Ring, B. A	Postmortem cerebral angiography	H-5174C1	$13,225
Sichel, F. J. M	Properties of contractile systems in cardiac muscle	H-336C8	3,450
Smith, Durwood J	Physiology of isolated surviving arteries and veins	H-1450C7	12,000
Surawicz, Borys	Role of electrolytes in cardiac arrhythmias	H-4858C1	8,361
Surawicz, Borys	do	H-4858C1S1	6,086
Tabakin, Burton S	Ventilatory obstruction in steady state exercise	H-4010C2	12,995
Tabakin, Burton S	Hemodynamic response to graded treadmill exercise	H-6121	15,197
Institution total, 16 grants, $279,660			
STATE TOTAL, 16 grants			279,660
VIRGINIA			
BLACKSBURG			
Virginia Polytechnic Institute			
Gross, W. B	A study of a bacterial endocarditis of chickens	H-3780C2	8,707
Institution total, 1 grant, $8,707			
CHARLOTTESVILLE			
Virginia, University of			
Brand, Eugene D	Central nervous system in shock	H-1942C6	8,625
Chanutin, Alfred	Effect of disease on red cell constituents	H-5716	20,967
Littlefield, J. B	Study of extracardiac collateral coronary circulation	H-4642C1	7,725
Maroney, Samuel P	Comparative aspects of ultraviolet induced hemolysis	H-5406	2,297
McGaughey, Harry S	Equilibration of substances across the placenta	H-2620C4	9,775
McGaughey, Harry S	do	H-2620C4S1	6,835
Muller, William H	Surgical treatment of heart diseases	H-2038C6	35,029
Shaw, Richard F	Linkage in hemophilia and Christmas disease	H-4609C1	15,410
Warren, Walter D	Hemodynamics and prophylactic shunt in cirrhosis	H-4644C1	12,788
Institution total, 9 grants, $119,451			
RICHMOND			
Richmond, University of			
Burke, Jack D	Fish blood oxy-hemoglobin affinity	H-4708C1	4,600
Institution total, 1 grant, $4,600			

Grantee	Project Title	Grant No.	Amount
VIRGINIA—Continued			
RICHMOND—Continued			
Virginia, Medical College of			
Bates, Hampton R., Jr.	Pulmonary physiology in the fetus	H-5807	$7,187
Bosher, Lewis H., Jr.	A study of extracorporeal circulation	H-3065C4	20,000
Hyun, Bong H	Histochemical study of thrombocytopenic purpura	H-6240	13,395
Jackson, Benjamin T	Studies in cardiovascular fetal physiology	H-5281	29,035
Kupfer, Henry G	Plasma, tissue, vascular factors in blood coagulation	H-5868	17,700
Moon, John Hoover	Simultaneous CR_{51} and N_{15} glycine RBC survival times	H-3353C3	7,245
Papper, Solomon	Cirrhosis—sodium excretion in hypertension	H-5162	30,073
Patterson, John L	Mechanisms of acute symptoms and therapeutic response	H-3361C3	21,204
Ramsey, Robert W	Factors underlying human performance	H-2004C6	12,471
Roberts, Phyllis S	Purification and activation of plasminogen	H-4016C2	18,000
Said, Sami I	Pulmonary capillary circulation and diffusing capacity	H-4226C1	10,000
Solomon, Sidney	Effect of choline on kidney function	H-3676C3	15,917
Institution total, 12 grants, $202,227			
WILLIAMSBURG			
William and Mary, College of			
Harrell, Byrant	Synthetic respiratory pigments	H-3002C4	1,725
Institution total, 1 grant, $1,725			
STATE TOTAL, 24 grants			336,710
WASHINGTON			
SEATTLE			
Firland Sanatorium			
Martin, Carroll J	Ventilation to perfusion variations in the lung	H-1892C6	13,000
Institution total, 1 grant, $13,000			
King County Central Blood Bank, Inc.			
Giblett, Eloise R	A study of inherited serum proteins	H-5780	17,519
Institution total, 1 grant, $17,519			
Northwest Anesthesia Laboratories			
Morris, Lucien E	Effect on cardiac output of various anesthetic agents	H-5959	25,000
Institution total, 1 grant, $25,000			

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Grantee	Project Title	Grant No.	Amount
WASHINGTON—Continued			
SEATTLE—Continued			
Providence Hospital			
Neve, Richard A	Enzymatic incorporation of iron into protoporphyrin	H-5831	$7,895
Institution total, 1 grant, $7,895			
Washington, University of			
Afonso, Jose F	Production of eclamptic-like syndrome in pregnancy	H-4960C1	11,886
Bell, John W	Flow characteristics of the peripheral vascular bed	H-5920	12,252
Benditt, Earl P	Mechanism of vascular reaction to injury	H-3174C4	35,667
Benditt, Earl P	do	H-3174C4S1	75,261
Blandau, Richard J	Cross-striations in cardiac muscle	H-2083C6	21,677
Boyden, Edward A	Growth of bronchial and vascular components of lungs	H-2547C4	11,730
Bruce, Robert A	Exercise studies in rheumatic heart disease	H-908C10	20,700
DeAlvarez, R. R	Renal biopsies in preeclampsia-eclampsia	H-4690C1	15,206
DeAlvarez, R. R	Serum and lipoproteins in pregnancy disorders	H-2474C4	13,762
Dodge, Harold T	Studies of left ventricular function in man	H-3391C4	11,500
Edmark, Karl W	Coronary angiography by injection during diastole	H-5320	23,000
Edmark, Karl W	Circulatory bypass of the heart and lungs	H-3049C4	25,208
Everett, Newton B	Measurement of plasma and blood in organs	H-1530C7	8,600
Everett, Newton B	Study of fine structure of cells and tissue	H-2698C4	38,065
Finch, Clement A	Studies in erythrokinetics	H-6242	64,635
Finch, Clement A	Erythrokinetics	H-2994C3	49,450
Fletcher, T. Lloyd	Tissue fibrosing compounds	H-2747C4	8,050
Gabrio, Beverly W	Erythrocyte enzymes	H-4614C1	17,250
Guntheroth, Warren	Acute venomotor changes in intact animals	H-3998C2	9,200
Harkins, Henry N	Vascular graft complications	H-1136C10	19,450
Hougie, Cecil	Effect of lipids on coagulation and fibrinolysis	H-5994	2,300
Hougie, Cecil	do	H-5994C1	21,742
Hougie, Cecil	Purification of Stuart factor and factor VII	H-5995	12,171
Hougie, Cecil	do	H-5995S1	26,037
Huitric, Alain C	Synthesis and stereochemistry of new cardioplegic agents	H-3843C2	11,534
Karpeles, Leo M	Pressure volume studies in the left atrial appendage	H-4750S1	188
Lamkee, Muriel J	Uterine hemodynamics and contractility during pregnancy	H-5891	19,208
Mackler, Bruce	Studies of the oxidative systems of heart muscle	H-5457	27,500
Martin, Arthur W	Circulatory physiology of the octopus	H-2557C4	23,063
Merendino, K. Alvin	A prosthetic aortic valve	H-2738C4	5,750
Merendino, K. Alvin	Problems involved in use of pump-oxygenator systems	H-3379C3	28,750
Merendino, K. Alvin	do	H-3379C3S1	17,332
Motulsky, Arno G	Human genetics in medicine	H-3091C4	34,500

Grantee	Project Title	Grant No.	Amount
WASHINGTON—Continued			
SEATTLE—Continued			
Washington, University of—Continued			
Ruch, Theodore C	Primate research center building	H–5396	$1, 438, 624
Ruch, Theodore C	Primate research center operation	H–6691	100, 390
Rushmer, Robert F	Mechanisms of cardiac control	H–716C9S1	1, 006
Rushmer, Robert F	——do	H–716C10	30, 627
Rushmer, Robert F	——do	H–716C10S	1, 910
Rushmer, Robert F	Flowmeter development	H–4531S1	399
Rushmer, Robert F	——do	H–4531C1	14, 000
Rushmer, Robert F	——do	H–4531C1S1	918
Rushmer, Robert F	——do	H–4531C1S2	10, 746
Scher, Allen Myron	Spread of electrical activity in the mammalian ventricle	H–1315C7S1	274
Scher, Allen Myron	——do	H–1315C8	19, 380
Scribner, Belding H	Continuous hemodialysis	H–5192C1	23, 000
Smith, O. A., Jr	Central nervous control of cardiovascular function	H–4741C1	12, 133
Smith, O. A., Jr	——do	H–4741C1S1	929
Tu, Wu-Hao	Humoral pressor agents in acute tubular necrosis	H–6355	16, 445
West, Theodore C	Physiology and pharmacology of cardiac pacemaker	H–2213C5	10, 235
Wilcox, Philip E	Characterization and properties of protein derivatives	H–3037C3S1	869
Wilcox, Philip E	——do	H–3037C4	27, 949
Woodbury, J. W	Effect of cardiac glycosides on renal function	H–4469S1	256
Woodbury, J. W	——do	H–4469C1	15, 700
Woodbury, J. W	——do	H–4469C1S1	974
Institution total, 54 grants, $2,449,388			
STATE TOTAL, 58 grants			2, 512, 802
WEST VIRGINIA			
BECKLEY			
Miners Memorial Hospital Association—Beckley Memorial Hospital			
Hyatt, Robert E	Epidemiological study of lung disease in coal miners	H–4796C1	11, 759
Hyatt, Robert E	Ventilation mechanics in chronic pulmonary disease	H–5112	15, 209
Institution total, 2 grants, $26,968			
MORGANTOWN			
West Virginia University			
Boyer, Charles C	Plastic reconstruction of pathological renal glomeruli	H–3456C3	7, 954
Higginbotham, A. C	Mechanisms for diminishing atheromata	H–3207C4	15, 582

Grantee	Project Title	Grant No.	Amount
WEST VIRGINIA—Continued			
MORGANTOWN—Continued			
West Virginia University—Continued			
Jones, Richard E	Pretesting circulatory response in surgical patients	H-6151	$7,215
Krause, R. F	Effect of vitamin A on serum lipids	H-5738	8,108
Tarnay, Thomas J	Coagulation and valvular prostheses	H-6157	16,577
Warden, Herbert E	Fabrication and testing of prosthetic valve	H-6671	12,077
Watts, Daniel T	Role of sympathomimetic amines in hemorrhagic shock	H-1684C7R1	8,849
Institution total, 7 grants, $76,362			
STATE TOTAL, 9 grants			103,330
WISCONSIN			
MADISON			
Jackson Foundation			
Parsons, William B	Reduction of blood cholesterol levels with niacin	H-3787C2	6,900
Parsons, William B	C_{14} acetate-cholesterol conversion—effect of niacin	H-5470	10,048
Institution total, 2 grants, $16,948			
Wisconsin, University of			
Brown, Henry	Peptides of human adult hemoglobin	H-3472C3	9,200
Castillo, Cesar A	Development of an ultrasonic flowmeter	H-5216C1	6,843
Clatanoff, Dallas V	Platelet agglutinins and thrombocytopenic purpura	H-3752C3	9,430
Cleland, William W	Studies on the specificity of acylating enzymes	H-5095C1	10,023
Coye, Robert D	Protein excretion by the kidney during inflammation	H-3548C3	6,382
Cree, Edna M	Lung function studies	H-4559C1	6,210
Crumpton, Charles W	Ventricular blood flow and metabolism	H-2076C5	22,080
Gordon, Edgar S	Effect of adrenal steroids on lipid metabolism	H-3380C3	20,000
Gott, Vincent L	Investigation of intracardiac valvular prosthesis	H-4162C1	12,500
Gott, Vincent L	The metabolism of high energy compounds in the heart	H-5824	3,000
Gott, Vincent L	——do	H-5824C1	10,060
Gott, Vincent L	——do	H-5824C1S1	9,430
Gott, Vincent L	Development and placement of prosthetic heart valves	H-5985	11,046
Green, David E	Enzyme activity in heart muscle	H-458C11	140,121
Harlow, Harry F	Operation of a Wisconsin primate center	H-6287	367,540
Harlow, Harry F	Construction of a Wisconsin primate center	H-6288	1,297,000
Kendrick, J. E	Vascular responses during controlled cardiac output	H-4098C2	8,211
Kupchan, S. Morris	Chemistry of the veratrum alkaloids	H-2275C5	17,227
Kupchan, S. Morris	Chemistry of biologically-active natural products	H-2952C4	29,670

Grantee	Project Title	Grant No.	Amount
WISCONSIN—Continued			
MADISON—Continued			
Wisconsin, University of—Continued			
Lary, Henry A	Interrelation of estrogens and thyroid hormones	H–2677C4	$14, 750
Meyer, Roland K	Physiological stress in natural populations	H–2833C8	15, 036
Mossman, H. W	A study of mammalian placentas and fetal membranes	H–3331C3	26, 732
Murphy, Q. R	Potassium in the production of cardiac arrhythmia	H–1203C8	6, 382
Orsini, Margaret W	Comparative uterine basculature	H–4202C2	11, 270
Rankin, John	Alveolar capillary diffusion in health and disease	H–3335C3	6, 000
Rankin, John	Epidemiology and physiopathology of farmers lung	H–6213	34, 615
Schilling, Robert F	Genetic carriers of hereditary spherocytosis	H–3227C3	11, 000
Shideman, F. E	Energy sources for renal tubular excretory mechanisms	H–1634C8	10, 177
Shideman, F. E	Mechanisms of positive inotropic responses to drugs	H–4854C1	12, 880
Siebecker, Karl L	Prevention of cardiac arrhythmias during hypothermia	H–5331C1	13, 800
Siebens, Arthur A	Excitability and contractility of the myocardium	H–4036C3	18, 055
Institution total, 31 grants, $2,176,670			
MILWAUKEE			
Marquette University School of Medicine			
Glicklick, Marvin	Independent coronary and total body perfusion	H–5204C1	12, 305
Hamilton, Lyle H	Cardiopulmonary studies by use of gas chromatography	H–5530	15, 921
Hardman, Harold F	Analysis of sympathomimetic receptors	H–5697	9, 513
Hardman, Harold F	——do	H–5697S1	4, 184
Hilton, James G	Factors affecting pressor and depressor responses	H–4493C2	5, 400
Johnson, Shirley A	Platelet activity in coagulation in thrombocytopenia	H–6033	13, 800
Johnson, Shirley A	——do	H–6033S1	13, 800
Lepley, Derward, Jr	Physiology of the infundibulum of the right ventricle	H–4475C2	12, 500
Peterson, J. C	Cardiopulmonary research in children	H–2790C4	19, 440
Quick, Armand J	Coagulation defect in hemophilia	H–1612C14	10, 000
Roll, Paul M	Biosynthesis of nucleic acids in mammalian tissues	H–1937C6	10, 580
Stead, William W	Development of an improved test of pulmonary function	H–6004	1, 835
Stead, William W	——do	H–6004C1	11, 000
Stead, William W	——do	H–6004C1S1	20, 000
Wagner, Marvin	Arteriovenous shunts for peripheral vascular disease	H–5401	8, 000
Institution total, 15 grants, $168,278			

Grantee	Project Title	Grant No.	Amount
WISCONSIN—Continued			
MILWAUKEE—Continued			
Milwaukee Blood Center, Inc.			
Greenwalt, Tibor J	Detecting and preserving rare blood	H–5006C1	$9, 044
Morell, Samuel A	Functions of thiols in human erythrocytes	H–4965C1	11, 801
Institution total, 2 grants, $20,845			
STATE TOTAL, 50 grants			2, 382, 741
WYOMING			
LARAMIE			
Wyoming University			
Johnson, William E	Synthesis and pharmacology of new autonomomimetics	H–5815	3, 680
Kahl, Raymond J	Synthesis and pharmacology of beta-3-furyl alkylamines	H–2928C4	5, 248
Institution total, 2 grants, $8,928			
STATE TOTAL, 2 grants			8, 928
GUAM (None)			
PUERTO RICO			
RIO PIDRAN			
Puerto Rico, University of			
Raffucci, Francisco	Hemodynamics in intracardiac surgery	H–1475C8	6, 058
Institution total, 1 grant, $6,058			
SAN JUAN			
Puerto Rico, University of			
Cervoni, Walter A	Basic hematologic studies	H–2980C3	17, 422
De Arrellano, R	Physiopathological changes in severe anemia	H–5424	14, 950
Diazrivera, R. S	Development of cardiovascular research potential	H–4044C2S1	12, 500
Nelson, Thomas E., Jr	Hemostatic factors and blood vessel integrity	H–3552C3	9, 016
Oliver-Gonzales, J	Hematopoiesis induced by polysaccharides	H–2957C4	21, 861
Ortiz, Antonio	A study of dehydration in infants with severe diarrhea	H–3004C2	17, 250
Pomaleslebron, A	Immunologic response at the cellular level	H–3113C3	12, 880

Grantee	Project Title	Grant No.	Amount
PUERTO RICO—Continued			
SAN JUAN—Continued			
Puerto Rico, University of—Continued			
Raffucci, Francisco	Pathogenesis and therapy of portal hypertension	H–1849C6	$6, 764
Raffucci, Francisco	A study in cardiovascular surgery	H–3048C3	20, 000
Institution total, 9 grants, $132,643			
STATE TOTAL, 10 grants			138, 701
VIRGIN ISLANDS (None)			
ARGENTINA			
BUENOS AIRES			
Buenos Aires, University of			
Paladini, Alejandro	Angiotensin in experimental and human hypertension	H–5153	3, 500
Institution total, 1 grant, $3,500			
STATE TOTAL, 1 grant			3, 500
AUSTRALIA			
ADELAIDE			
Adelaide, University of			
Maxwell, George M	Metabolism of the canine and marsupial heart	H–5466	17, 797
Institution total, 1 grant, $17,797			
STATE TOTAL, 1 grant			17, 797
BELGIUM			
ANTWERP			
Institut Bunge			
Van Bogaert, A	Pulmonary arterial and cardiovascular effects	H–6012	14, 325
Institution total, 1 grant, $14,325			

Grantee	Project Title	Grant No.	Amount
BELGIUM—Continued			
GHENT			
Ghent, University of			
Heymans, C	Basoceptors in hypertension, hypothermia, lung	H–3393C3	$9,000
Institution total, 1 grant, $9,000			
STATE TOTAL, 2 grants			23,325
BRAZIL			
RIO DE JANEIRO			
Instituto de Biofisica, University of Brazil			
Paes, de Carvalho	Studies on the atrioventricular node of the heart	H–5148C1	8,740
Institution total, 1 grant, $8,740			
SAO PAULO			
Faculty of Medicine—University of Sao Paulo			
Eichbaum, Francisco	Neural mechanism of circulatory failure in diphtheria	H–5477	17,430
Institution total, 1 grant, $17,430			
STATE TOTAL, 2 grants			26,170
CANADA			
EDMONTON, ALBERTA			
Alberta, University of			
Palmer, Keith H	Taxaceae—the structure of the cardiotonic compounds	H–5310R1	18,050
Institution total, 1 grant, $18,050			
GUELPH			
Ontario Veterinary College			
Mustard, James F	Phospholipids, blood coagulation, and atherosclerosis	H–4946C1	19,600
Institution total, 1 grant, $19,600			

Grantee	Project Title	Grant No.	Amount
CANADA—Continued			
MONTREAL, QUEBEC			
McGill University			
Hollenberg, Charles	Hormonal effects on lipid metabolism	H-5282	$9,775
Mason, S. G	The rheology of blood	H-5911	11,385
Venning, Eleanor H	Mechanisms in the secretion of aldosterone	H-2716C4	9,890
Institution total, 3 grants, $31,050			
Montreal, University of			
Selye, Hans	The mechanism of acute infarctoid cardiopathy	H-3688C3	32,400
Selye, Hans	----do	H-3688C3S1	2,100
Institution total, 2 grants, $34,500			
Royal Victoria Hospital			
Kalz, Frederick	Investigation of capillary permeability in human skin	H-5226	7,650
Institution total, 1 grant, $7,650			
SASKATOON, SASKATCHEWAN			
Saskatchewan, University of			
Altschul, Rudolph	Heme compounds and cholesterol metabolism	H-4568C1	8,338
Jaques, Louis B	Spontaneous hemorrhage with anticoagulant drugs	H-4877C1	24,150
Sutherland, G. B	Anaphylactic responses in blood and smooth muscle	H-5795	14,950
Institution total, 3 grants, $47,438			
TORONTO, ONTARIO			
Toronto, University of			
Movat, Henry Z	Electron microscopy—acute glomerulonephritis	H-5657	13,110
Institution total, 1 grant, $13,110			
VANCOUVER, B.C.			
British Columbia, University of			
McGeer, Patrick L	Analysis of aromatic urinary compounds	H-5664	9,200
Institution total, 1 grant, $9,200			
WINNIPEG, MANITOBA			
Manitoba, University of			
Chown, Bruce	Materno-fetal barrier and Rh	H-3238C3	13,765
Institution total, 1 grant, $13,765			
STATE TOTAL, 14 grants			194,363

Grantee	Project Title	Grant No.	Amount
CHILE			
SANTIAGO			
Chile, University of			
Rojas-Villegas, F.	Race and diet as factors in atherosclerosis in Chile	H-4354C1	$6,950
Yudilevich, David L.	Transcapillary movement by multiple tracer methods	H-5929	18,200
Institution total, 2 grants, $25,150			
Instituto de Neurocirugia e Investigaciones Cerebrales—Chile University			
Martinez, Alfonso	Electronmicroscopic study of cerebral vessels in man	H-5172	9,430
Institution total, 1 grant, $9,430			
STATE TOTAL, 3 grants			34,580
COLOMBIA			
BOGOTÁ			
Hospital de San Juan de Dios			
Lichtenberger, Egon	Study on atherosclerosis in Colombia	H-4538C1	1,800
Institution total, 1 grant, $1,800			
MEDELLIN			
Antioquia, University of, Medical School			
Latorre, Guillermo	Renal ischemia and changes in body composition	H-5136	6,903
Institution total, 1 grant, $6,903			
STATE TOTAL, 2 grants			8,703
DENMARK			
COPENHAGEN			
Copenhagen, University of			
Ussing, Hans H.	Physiology	H-6637C2	12,000
Institution total, 1 grant, $12,000			
STATE TOTAL, 1 grant			12,000

Grantee	Project Title	Grant No.	Amount
EL SALVADOR			
SAN SALVADOR			
El Salvador, University of, School of Medicine			
Rodriguez, Maria I.	Intraventricular conduction in mammalian heart	H–5475	$31,604
Institution total, 1 grant, $31,604			
STATE TOTAL, 1 grant			31,604
FINLAND			
HELSINKI			
Helsinki, University of			
Setala, Kai M. E.	Mechanism of experimental atherogenesis	H–4572C1	12,420
Institution total, 1 grant, $12,420			
Institute of Occupational Health			
Karvonen, Martti J.	Epidemiology of heart disease in Finland	H–4754C1	5,000
Institution total, 1 grant, $5,000			
STATE TOTAL, 2 grants			17,420
GREECE			
ATHENS			
Athens, University of			
Fessas, Phaedon	The problem of hemoglobin H	H–4541C1	5,000
Institution total, 1 grant, $5,000			
STATE TOTAL, 1 grant			5,000
INDIA			
CALCUTTA			
Indian Institute for Biochemistry and Experimental Medicine			
Pakrashi, Satyesh C.	Hypotensive and tranquilizing alkaloids from India	H–4320C2	10,925
Institution total, 1 grant, $10,925			
STATE TOTAL, 1 grant			10,925

Grantee	Project Title	Grant No.	Amount
IRELAND			
DUBLIN			
Medical Research Council of Ireland Laboratories			
Conway, Edward J.	The redox pump in the active transport of ions	H–4860C1	$15, 985
Institution total, 1 grant, $15,985			
STATE TOTAL, 1 grant			15, 985
ISRAEL			
JERUSALEM			
Hadassah Medical School—Hebrew University			
Davies, Michael A.	Immunological aspects of heart disease	H–5739	17, 089
Groen, Juda J.	Coronary disease related to diet and ways of life	H–4427C1	42, 550
Rachmilewitz, M.	B_{12} mobilization and transport in experimental anemia	H–5769	18, 849
Stein, Yeheskel	Biosynthesis of lipids in the aorta	H–5705	17, 322
Institution total, 4 grants, $95,810			
PETAH TIQVA			
Medical Research Institute—Beilinson Hospital			
De Vries, Andre	Epidemiology and etiology of urolithiasis in Israel	H–5774	17, 652
Institution total, 1 grant, $17,652			
HASHARON HOSPITAL			
Matoth, Yehuda	Studies on erythropoietin *in vitro*	H–4931C1	7, 245
Institution total, 1 grant, $7,245			
TEL AVIV			
Government Hospital—Tel Aviv-Jaffa			
Brunner, Daniel	Diet work and ethnic factors in vascular diseases	H–4520C1	25, 000
Institution total, 1 grant, $25,000			
STATE TOTAL, 7 grants			145, 707

Grantee	Project Title	Grant No.	Amount
ITALY			
GENOA			
Faculty of Medicine and Surgery—University of Genoa			
Bonsignore, Arturo	Carbohydrate metabolism in red cells in human favism	H–4586C1	$10,000
Salvidio, Emanuele	Susceptibility of Italians to drug-induced hemolysis	H–5682	15,500
Institution total, 2 grants, $25,500			
NAPLES			
Faculty of Medicine and Surgery—University of Naples			
Giordano, Carmelo	A therapy of renal disease based on urea toxicity	H–5773	11,017
Institution total, 1 grant, $11,017			
ROME			
Center Against Cardiovascular Disease and Rheumatic Fever of Rome			
Fidanza, Flaminio	International research—epidemiology of heart disease	H–4672C1	6,000
Institution total, 1 grant, $6,000			
STATE TOTAL, 4 grants			42,517
JAPAN			
OSAKA			
Faculty of Medicine—Osaka University			
Donomae, Imasato	Epidemiology and pathology of arteriosclerosis—Japan	H–4402C1	10,000
Institution total, 1 grant, $10,000			
TOKYO			
Tokyo Medical and Dental University			
Shimamoto, Takio	Arteriosclerosis under low fat diet	H–5196R1	27,383
Institution total, 1 grant, $27,383			
STATE TOTAL, 2 grants			37,383

Grantee	Project Title	Grant No.	Amount
KOREA			
SEOUL			
Yonsei University School of Medicine			
Lee, Woo C	A significance of myocardial catecholamines	H–5264C1	$5, 405
Osborn, John J	Circulatory physiology after cardiac defect closure	H–5265S1	15, 525
Institution total, 2 grants, $20,930			
STATE TOTAL, 2 grants			20, 930
LEBANON			
BEIRUT			
American University of Beirut			
Hanania, George I	Heme-linked effects in hemoglobin reactions	H–4994C1	7, 820
Wilson, John L	Cardiovascular disease in the Middle East	H–3671C2	5, 865
Institution total, 2 grants, $13,685			
STATE TOTAL, 2 grants			13, 685
NETHERLANDS			
AMSTERDAM			
Excerpta Medica Foundation			
Woerdeman, M. W	Publication of Cardiovascular Abstracting Journal	H–2898C4	14, 950
Woerdeman, M. W	Publication of Gerontology Abstracting Journal	H–3621C3	8, 625
Institution total, 2 grants, $23,575			
LEIDEN			
Leiden, University of			
Bottcher, C. J	Atherosclerosis and thrombosis lipid investigations	H–5766	24, 000
Institution total, 1 grant, $24,000			
THE HAGUE			
Netherlands Nutrition Council			
Van Buchem, Frans	A field survey on coronary disease	H–5471	6, 260
Institution total, 1 grant, $6, 260			
STATE TOTAL, 4 grants			53, 835

Grantee	Project Title	Grant No.	Amount
PERU			
LIMA			
Brain Research Center, Peruvian Armed Forces			
Alzamora-Castro, V	Cardiovascular studies at high altitude	H–6740	$24,867
Institution total, 1 grant, $24,867			
Universidad Nacional Mayor De San Marcos			
Arias-Stella, Javie	Infant hearts and pulmonary vessels at high altitude	H–4787C1	13,600
Garcia-Caceres, U	Tublar alterations in glomerulonephritis	H–5692	14,200
Institution total, 2 grants, $27,800			
STATE TOTAL, 3 grants			52,667
REPUBLIC OF CONGO			
STANLEYVILLE			
Laboratoire Medical Provincial			
Courtois, Ghislain	Capture and camp for experiments on chimpanzees	H–5207	27,951
Institution total, 1 grant, $27,951			
STATE TOTAL, 1 grant			27,951
SWEDEN			
GOTHENBURG			
Gothenburg, University of			
Branemark, P	Studies in bone marrow function	H–5724	25,878
Institution total, 1 grant, $25,878			
Faculty of Medicine—University of Gothenburg			
Folkow, Bjorn U	Neurohormonal control of the vascular bed	H–5675	9,000
Folkow, Bjorn U	....do	H–5675S1	470
Institution total, 2 grants, $9,470			

Grantee	Project Title	Grant No.	Amount
SWEDEN—Continued			
LUND			
Lund, University of			
Blomstrand, Rolf L	Study on lipid matebolism related to atherosclerosis	H–5902	$9, 132
Borgstrom, Bengt	Metabolism of exogeneous and endogeneous lipids	H–5302	61, 550
Institution total, 2 grants, $70,682			
Institute of Physiology—University of Lund			
Kahlson, George S	Histamine formation in foetal and regenerative growth	H–4961C1	6, 000
Institution total, 1 grant, $6,000			
Stockholm			
Isotope Laboratory of Cardiovascular Clinic, South Hospital			
Nylin, Gustave	Studies on cerebral blood flow with labeled red cells	H–3219C2	27, 149
Institution total, 1 grant, $27,149			
Karolinska Institutet			
Bellman, Sven E	Deteriorative and regenerative vascular responses	H–4865	17, 721
Bergstrom, Sune	Metabolism of steroids and bile acids	H–2842C4	55, 000
Jorpes, J. E	Blood clotting factors	H–4295C1	14, 700
Thorsen, H. G	Stabilizers for erythrocyte suspension	H–4909	25, 917
Uvnas, Borje	Physiological and pharmacological study—circulation	H–6633	26, 586
Institution total, 5 grants, $139,924			
UPPSALA			
Uppsala, University of			
Obrink, Karl J	Ion movements in beating hearts	H–5346	5, 750
Institution total, 1 grant, $5,750			
STATE TOTAL, 13 grants			284, 853
UNION OF SOUTH AFRICA			
CAPETOWN			
Cape Town, University of			
Bronte-Stewart, B	Dietary fat, serum cholesterol and heart disease	H–3316C3	28, 750
Bronte-Stewart, B	....do	H–3316C3S1	5, 175
Institution total, 2 grants, $33,925			

Grantee	Project Title	Grant No.	Amount
UNION OF SOUTH AFRICA—Continued			
DURBAN			
Natal University			
Wainwright, John	Atherosclerosis in certain races	H–5445	$4,830
Institution total, 1 grant, $4,830			
JOHANNESBURG			
South African Institute for Medical Research			
Bernstein, Ralph E	Red cell metabolic defects in drug-dietary anemias	H–5448	7,360
Walker, Alexander R	Studies on coronary artery disease among the Bantu	H–4244C1	27,280
Institution total, 2 grants, $34,640			
STATE TOTAL, 5 grants			73,395
UNITED KINGDOM			
BIRMINGHAM			
Birmingham University			
Watts, George T	Collagen and mucopolysaccharides in healing wounds	H–5772	8,450
Institution total, 1 grant, $8,450			
EDINBURGH			
Edinburgh University			
Gardner, Dugald L	The pathogenesis of hypertensive vascular disease	H–5173	14,881
Institution total, 1 grant, $14,881			
LONDON			
London School of Hygiene and Tropical Medicine—University of London			
Reid, Donald D	U.S.-U.K. joint studies in cardiorespiratory disease	H–4775S1	20,000
Institution total, 1 grant, $20,000			
OXFORD			
Oxford, University of			
Whitehouse, Michael	Cholesterol catabolism in mammalian tissues	H–5472	6,325
Institution total, 1 grant, $6,325			
Sir William Dunn School of Pathology—Oxford University			
Florey, Howard W	The occurrence of atherosclerosis in aging pigs	H–5932	3,450
Institution total, 1 grant, $3,450			

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Grantee	Project Title	Grant No.	Amount
UNITED KINGDOM—Continued			
READING			
National Institute for Research in Dairying			
Scott-Blair, G. W	Rheology of blood in flow and coagulation	H–5732	$14, 317
Institution total, 1 grant, $14,317			
STATE TOTAL, 6 grants			67, 423
WEST GERMANY			
GOTTINGEN			
Faculty of Medicine, University of Gottingen			
Beuren, Alois J	Metabolism of the normothermic and hypothermic heart	H–5582	10, 879
Institution total, 1 grant, $10,879			
STATE TOTAL, 1 grant			10, 879
YUGOSLAVIA			
ZAGREB			
Central Institute of Hygiene			
Buzina, Ratko	Epidemiology of heart disease in Yugoslavia	H–4774C1	5, 000
Institution total, 1 grant, $5,000			
STATE TOTAL, 1 grant			5, 000

RESEARCH PROJECT GRANTS TOTALS AND INSTITUTION INDEX

State and Institution	Number	Dollars	Page No.
United States			
ALABAMA:			
Alabama, University of	20	581, 184	3
Auburn University	1	11, 247	3
Total	21	592, 431	
ALASKA (None)			
ARIZONA:			
Arizona State University	1	11, 500	3
Basic Health Research Insititute	2	23, 115	4
Total	3	34, 615	
ARKANSAS:			
Arkansas, University of	11	109, 318	4
Total	11	109, 318	
CALIFORNIA:			
California Department of Public Health	1	20, 954	4
California Institute of Technology	6	246, 860	10
California, University of	85	2, 191, 525	5, 6, 11
Cedars of Lebanon Hospital	13	225, 230	7, 8
Children's Hospital	4	79, 610	12
Children's Hospital of the East Bay	1	38, 337	10
Children's Hospital Society of Los Angeles	3	59, 886	8
City of Hope Medical Center	4	66, 553	6
College of Medical Evangelists	13	212, 710	6, 8
Highland Alameda County Hospital	1	32, 200	10
Immaculate Heart College	1	8, 165	8
Institute of Medical Research—Huntington Memorial Hospital	2	21, 637	11
Irwin Memorial Blood Bank of San Francisco Medical Society	1	14, 191	12
Little Company of Mary Hospital	1	7, 216	14
Los Angeles County Hospital	3	43, 578	9
Mount Zion Hospital and Medical Center	12	185, 888	12
Palo Alto Medical Research Foundation	4	65, 647	10
Presbyterian Medical Center	1	20, 222	12
United States—Continued			
CALIFORNIA—Continued			
Rancho Los Amigos Hospital	2	27, 071	6
San Fernando Valley State College Foundation	1	5, 508	10
San Francisco Institute of Medical Science	4	100, 769	12
San Mateo County, Community Hospital of	1	10, 643	13
Scripps Clinic and Research Foundation	4	82, 472	6
Southern California, University of	33	532, 272	9
St. Joseph Hospital	3	52, 200	5
Stanford University	27	428, 627	13
Western Biological Laboratories, Inc	2	27, 315	5
Total	233	4, 807, 286	
COLORADO:			
Colorado State University Research Foundation	1	31, 682	15
Colorado, University of	18	257, 826	14
National Jewish Hospital	3	49, 579	15
Individual Grant	1	1, 700	15
Total	23	340, 787	
CONNECTICUT:			
Connecticut State Department of Health	1	17, 825	15
Connecticut, University of	4	43, 414	16
Yale University	23	361, 961	15
Total	23	423, 200	
DELAWARE:			
American Society for Study of Arteriosclerosis	1	6, 000	16
Dover Medical Research Center, Inc	1	16, 560	16
Total	2	22, 560	
DISTRICT OF COLUMBIA:			
Children's Hospital Research Foundation	3	44, 850	17

RESEARCH PROJECT GRANTS TOTALS AND INSTITUTION INDEX—Continued

State and Institution	Number	Dollars	Page No.
United States—Continued			
DISTRICT OF COLUMBIA—Continued			
Fellowship Free Service	1	11, 845	17
George Washington University	12	181, 520	17
Georgetown University	17	280, 833	17
Howard University	14	159, 495	18
James F. Mitchell Foundation for Medical Education and Research	1	191, 905	18
National Academy of Sciences—National Research Council	2	97, 043	18
Pan American Sanitary Bureau	2	96, 913	18
Reed Research Foundation	2	15, 994	19
Washington Hospital Center	1	13, 621	19
Yater Clinic	2	20, 247	19
Total	57	1, 114, 266	
FLORIDA:			
Baptist Memorial Hospital	2	16, 318	20
Florida State Board of Health	2	69, 244	20, 21
Florida State University	1	5, 432	21
Florida, University of	14	217, 987	20
Miami, University of	18	324, 446	19
Mount Sinai Hospital of Greater Miami	3	19, 837	20
Orange Memorial Hospital	1	1, 000	21
Yerkes Laboratories of Primate Biology, Inc	1	172, 500	20
Total	42	826, 764	
GEORGIA:			
Emory University	18	261, 351	21
Evans County Health Department	1	29, 168	23
Georgia Department of Public Health	2	61, 498	22
Georgia, Medical College of	14	170, 280	22
Georgia, University of	1	3, 000	21
Piedmont Hospital	1	11, 000	22
Total	37	536, 297	
United States—Continued			
HAWAII:			
Queens Hospital	1	11, 500	23
Individual Grant	2	2, 900	23
Total	3	14, 400	
IDAHO (None)			
ILLINOIS:			
Chicago Board of Health	1	40, 940	23
Chicago Medical School	9	99, 834	23
Chicago University of	24	563, 589	24
Evanston Hospital Association	4	70, 383	27
Hektoen Institute for Medical Research of the Cook County Hospital	7	148, 480	24
Illinois Institute of Technology	1	13, 035	25
Illinois, University of	22	319, 456	25, 27
Loyola University	3	25, 213	25
Michael Reese Hospital and Medical Center	8	518, 250	25
Michael Reese Research Foundation	1	20, 479	26
Northwestern University	25	414, 082	26, 27
Presbyterian-St. Lukes Hospital	13	238, 416	26
Total	118	2, 472, 157	
INDIANA:			
De Pauw University	1	8, 740	28
Indiana University Foundation Research Division	19	788, 504	28
Notre Dame, University of	1	4, 094	29
Purdue Research Foundation	5	118, 962	28
Total	26	920, 300	
IOWA:			
Iowa State, University of	12	179, 297	29
Iowa State University of Science and Technology	4	50, 940	29
Total	16	230, 237	

State and Institution	Number	Dollars	Page No.
United States—Continued			
KANSAS:			
Kansas State University of Agriculture and Applied Science	1	10, 465	30
Kansas, University of	16	201, 984	30
Total	17	212, 449	
KENTUCKY:			
Kentucky, University of	7	135, 410	30
Louisville, University of	25	319, 913	31
Total	32	455, 323	
LOUISIANA:			
Louisiana State University	19	334, 177	32
Tulane University	31	569, 386	33
Total	50	903, 563	
MAINE:			
Maine Medical Center	2	29, 170	34
Roscoe B. Jackson Memorial Laboratory	2	35, 098	34
Total	4	64, 268	
MARYLAND:			
Baltimore City Hospitals	7	133, 069	34
Church Home and Hospital	1	13, 800	34
College of Notre Dame of Maryland	1	3, 595	34
Johns Hopkins University	49	1, 009, 883	35
Levindale Hebrew Home and Infirmary	1	26, 910	36
Maryland, University of	15	208, 700	36, 37
Mercy Hospital, Inc	1	12, 919	36
Peninsula General Hospital	1	12, 340	37
Sinai Hospital of Baltimore, Inc	6	82, 899	37
Total	82	1, 504, 115	

State and Institution	Number	Dollars	Page No.
United States—Continued			
MASSACHUSETTS:			
Avco Cooperation—Research and Advanced Development Division	1	14, 801	44
Beth Israel Hospital	1	13, 800	37
Bio-Research Institute, Inc	1	7, 913	40
Boston Dispensary	1	20, 010	37
Boston Floating Hospital	3	38, 750	37
Boston University	13	207, 988	38
Brandeis University	1	9, 200	43
Children's Hospital Medical Center	5	167, 599	38
Clark University	1	15, 249	44
Harvard University	71	2, 197, 347	41
Institute for Muscle Research, Inc	1	87, 032	44
International Cardiovascular Society	1	6, 800	38
Lahey Foundation	2	28, 328	38
Mallory Institute of Pathology Foundation	2	26, 210	38
Massachusetts Eye and Ear Infirmary	2	45, 775	39
Massachusetts General Hospitals	11	230, 969	39
Massachusetts Institute of Technology	2	35, 097	43
Massachusetts Memorial Hospitals	12	199, 399	39
Memorial Hospital	2	62, 301	44
Mount Holyoke College	1	823	43
New England Center Hospital	9	185, 209	40
New England Medical Center	3	49, 250	39
Peter Bent Brigham Hospital	2	118, 360	40
Protein Foundation, Inc	2	278, 134	43
Red Acre Farm, Inc	1	25, 000	43
Retina Foundation	2	161, 404	40
St. Elizabeth's Hospital	2	60, 950	40
St. Vincent Hospital	1	2, 300	44
Tufts University	8	185, 566	40
Worcester Foundation for Experimental Biology	7	133, 633	43
Worcester Polytechnic Institute	1	6, 883	44
Individual Grant	1	30, 000	44
Total	170	4, 602, 830	

State and Institution	Number	Dollars	Page No.
United States—Continued			
MICHIGAN:			
Henry Ford Hospital	3	45, 677	45
Michigan Department of Health	2	30, 282	46
Michigan, University of	26	851, 660	45
Wayne County General Hospital	3	30, 253	46
Wayne State University	17	240, 356	46
Total	51	1, 198, 228	
MINNESOTA:			
Charles T. Miller Hospital	2	53, 119	49
Mayo Association	12	217, 888	49
Minneapolis General Hospital Research Foundation, Inc	2	20, 187	47
Minnesota, University of	67	1, 537, 146	47
St. Barnabas Hospital Arteriosclerosis Research Laboratory	1	19, 550	49
Total	84	1, 847, 890	
MISSISSIPPI:			
Mississippi, University of	22	327, 234	50
Total	22	327, 234	
MISSOURI:			
Community Studies, Inc	2	61, 144	51
Greater Kansas City Mental Health Foundation	1	4, 368	51
Institute of Medical Education and Research	1	13, 018	51
Jewish Hospital	3	41, 195	51
Kirksville College of Osteopathy and Surgery	2	71, 937	51
Missouri, University of	3	38, 470	50
St. Louis University	12	172, 609	51
Washington University	31	605, 038	52
Total	55	1, 007, 779	
United States—Continued			
MONTANA:			
Holter Research Foundation	1	18, 128	53
Total	1	18, 128	
NEBRASKA:			
Creighton University	6	44, 853	53
Nebraska, University of	11	102, 107	53
Total	17	146, 960	
NEVADA (None)			
NEW HAMPSHIRE:			
Dartmouth College	13	192, 830	54
New Hampshire State Hospital	1	14, 835	54
New Hampshire, University of	1	9, 880	54
Total	15	217, 545	
NEW JERSEY:			
Beth Israel Hospital	1	67, 665	55
Ciba Pharmaceutical Products, Inc	2	34, 604	56
Middlesex General Hospital	1	7, 820	55
New Jersey Neuropsychiatric Institute	3	27, 130	55
New Jersey State Department of Health	1	33, 700	56
New Jersey Mental Health Research and Development Fund	1	11, 166	56
Rutgers State University	5	40, 010	55
Seton Hall University	8	89, 965	55
Stevens Institute of Technology	1	19, 550	54
Total	23	331, 610	
NEW MEXICO:			
Lovelace Foundation for Medical Education and Research	2	34, 315	56
Total	2	34, 315	

State and Institution	Number	Dollars	Page No.
United States—Continued			
NEW YORK:			
American Nurses Foundation, Inc	2	60, 922	61
Barnard College	2	13, 696	63
Beth El Hospital	1	12, 750	62
Beth Israel Hospital	4	56, 257	59
Booth Memorial Hospital	1	12, 952	60
Bronx Hospital	2	28, 091	58
Buffalo General Hospital	1	28, 456	59
Buffalo, University of	18	304, 898	59
City Hospital at Elmhurst	1	9, 449	60
Columbia University	41	1, 553, 760	62
Coney Island Hospital Research Institute	1	9, 258	59
Cornell University	26	599, 011	61, 63
Health Insurance Plan of Greater New York	1	35, 000	64
Health Research, Inc	5	53, 910	56, 60
Hospital for Special Surgery	1	12, 000	64
Institute for Advancement of Medical Communication	2	56, 055	64
Irvington House	1	51, 117	61
Jewish Chronic Disease Hospital	2	78, 221	59
Long Island Jewish Hospital	2	19, 805	61
Maimonides, Hospital of	3	28, 026	59
Mary Imogene Basset Hospital	5	75, 102	60
Memorial Sloan Kettering Institute for Cancer Research	5	99, 523	64
Montefiore Hospital	13	191, 226	58
Mount Sinai Hospital	14	214, 246	64
Nassau Hospital	2	23, 000	61
New York Medical College	9	167, 727	65
New York State Research Foundation for Mental Hygiene	3	20, 323	61
New York University Medical Center	43	897, 724	65
Public Health Service Hospital	2	60, 490	68
Research Foundation of State University of New York	41	503, 623	56
Rochester General Hospital	1	8, 050	68
Rochester, University of	13	210, 781	68
Rockefeller Institute	4	147, 990	66
United States—Continued			
NEW YORK—Continued			
Roswell Park Memorial Institute	2	22, 604	60
Sea View Hospital	1	12, 190	66
St. Agnes Hospital	1	18, 894	68
St. Lukes Hospital	1	12, 098	66
St. Vincent's Hospital of the City of New York	1	10, 660	67
Syracuse University	1	7, 935	68
Union University	11	295, 275	58
Yeshiva University	30	655, 285	67
Individual Grant	1	10, 000	69
Total	319	6, 674, 684	
NORTH CAROLINA:			
Duke University	33	884, 096	69
North Carolina, University of	18	546, 847	69
Wake Forest College	15	259, 502	70
Total	66	1, 690, 445	
NORTH DAKOTA:			
North Dakota State University of Agriculture and Applied Science	2	6, 210	71
North Dakota, University of	1	3, 795	71
Total	3	10, 005	
OHIO:			
Akron City Hospital	1	11, 776	71
Children's Hospital	1	12, 650	72
Cincinnati, University of	13	139, 391	72
Cleveland Clinic Foundation	5	317, 303	73
Jewish Hospital and Medical Center—May Institute for Medical Research	5	195, 103	72
Kent State University	1	7, 475	75
Mount Sinai Hospital	1	36, 540	73
Ohio State University	5	42, 684	74
Ohio State University Research Foundation	14	225, 346	74

RESEARCH PROJECT GRANTS TOTALS AND INSTITUTION INDEX—Continued

State and Institution	Number	Dollars	Page No.
United States—Continued			
OHIO—Continued			
St. Vincent's Charity Hospital	4	52, 180	73
Timken-Mercy and Mercy Hospitals	1	5, 984	72
Western Reserve University	36	732, 779	73
Total	87	1, 779, 211	
OKLAHOMA:			
Oklahoma Medical Research Institute	4	108, 173	75
Oklahoma, University of	13	369, 044	75
St. Mary's Hospital	1	7, 526	75
Total	18	484, 743	
OREGON:			
Medical Research Foundation of Oregon	8	1, 802, 468	76
Oregon State University	2	13, 018	76
Oregon, University of	14	984, 625	76, 77
Portland, University of	1	8, 464	77
Total	25	2, 808, 575	
PENNSYLVANIA:			
Albert Einstein Medical Center	4	60, 045	78
Bryn Mawr Hospital	2	32, 618	77
Carnegie Institute of Technology	1	17, 272	83
Children's Hospital	4	115, 329	78
Children's Hospital of Pittsburgh	2	16, 205	83
Elizabeth Steel Magee Hospital	1	8, 797	83
Franklin Institute of State of Pennsylvania	1	9, 200	78
Geisinger Memorial Hospital and Foss Clinic	1	45, 392	77
Hahnemann Medical College and Hospital	26	382, 596	78
Haverford College	1	12, 650	77
Institute for Cancer Research	1	15, 443	79
Jefferson Medical College of Philadelphia	19	285, 937	79
Lankenau Hospital	2	33, 201	80
Mary Bailey Foundation for Heart and Great Vessel Research	1	28, 750	80
United States—Continued			
PENNSYLVANIA—Continued			
Mellon Institute of Industrial Research	1	16, 100	83
Misericordia Hospital	2	19, 320	80
Norristown State Hospital	1	9, 000	78
Pennsylvania State University	5	84, 163	84
Pennsylvania, University of	43	1, 630, 530	80
Philadelphia General Hospital	6	98, 925	81
Philadelphia General Hospital Research Fund	1	19, 972	81
Philadelphia Textile Institute	1	14, 150	81
Pittsburgh, University of	26	491, 611	83
Presbyterian Hospital	4	93, 740	82
Presbyterian Hospital	1	12, 000	84
Robert Packer Hospital	1	17, 980	84
St. Christopher's Hospital for Children	2	21, 217	82
Temple University	11	90, 144	82
Western Pennsylvania Hospital	1	15, 410	84
Wilkes College	1	6, 325	84
Wistar Institute of Anatomy and Biology	2	38, 678	82
Woman's Medical College of Pennsylvania	2	24, 734	82
Zoological Society of Philadelphia	2	116, 791	82
Total	179	3, 884, 225	
RHODE ISLAND (None)			
SOUTH CAROLINA:			
Clemson Agricultural College	2	9, 443	85
South Carolina Medical College	13	246, 426	85
Total	15	255, 869	
SOUTH DAKOTA:			
South Dakota, State University of	1	6, 210	85
Total	1	6, 210	
TENNESSEE:			
East Tennessee Tuberculosis Hospital	1	21, 366	86
Lipid Research, Inc	1	39, 698	86

RESEARCH PROJECT GRANTS TOTALS AND INSTITUTION INDEX—Continued

State and Institution	Number	Dollars	Page No.
United States—Continued			
TENNESSEE—Continued			
Meharry Medical College	1	6,900	87
Memphis State University	1	850	86
Tennessee, University of	21	346,239	86
Vanderbilt University	32	594,222	87
Total	57	1,009,275	
TEXAS:			
Baylor University	13	580,246	88, 90
J. K. and S. L. Wadley Research Institute and Blood Center	1	12,874	88
Methodist Hospital	1	11,466	90
Southwest Foundation for Research and Education	6	189,282	90
St. Paul Hospital	2	20,902	89
Texas Agricultural and Mechanical College	1	22,470	88
Texas, University of	30	466,282	88–90
West Texas State College	1	8,910	88
Total	55	1,312,432	
UTAH:			
Latter Day Saints Hospital	4	64,306	91
Utah, University of	13	193,329	91
Total	17	257,635	
VERMONT:			
Vermont, University of	16	279,660	91
Total	16	279,660	
VIRGINIA:			
Richmond, University of	1	4,600	92
Virginia, Medical College of	12	202,227	93
Virginia Polytechnic Institute	1	8,707	92
United States—Continued			
VIRGINIA—Continued			
Virginia, University of	9	119,451	92
William and Mary, College of	1	1,725	93
Total	24	336,710	
WASHINGTON:			
Firland Sanatorium	1	13,000	93
King County Central Blood Bank, Inc	1	17,519	93
Northwest Anesthia Laboratories	1	25,000	93
Providence Hospital	1	7,895	94
Washington, University of	54	2,449,388	94
Total	58	2,512,802	
WEST VIRGINIA:			
Miners Memorial Hospital Association—Beckley Memorial Hospital	2	26,968	95
West Virginia University	7	76,362	95
Total	9	103,330	
WISCONSIN:			
Jackson Foundation	2	16,948	96
Marquette University School of Medicine	15	168,278	97
Milwaukee Blood Center, Inc	2	20,845	98
Wisconsin, University of	31	2,176,670	96
Total	50	2,382,741	
WYOMING:			
Wyoming University	2	8,928	98
Total	2	8,928	
United States total	2,246	51,114,335	

630825 O - 62 - 9

RESEARCH PROJECT GRANTS TOTALS AND INSTITUTION INDEX—Continued

State and Institution	Number	Dollars	Page No.
Territories			
GUAM (None)			
PUERTO RICO:			
Puerto Rico, University of	10	138, 701	98
Total	10	138, 701	
VIRGIN ISLANDS (None)			
Territories total	10	138, 701	
Foreign Countries			
ARGENTINA:			
Buenos Aires, University of	1	3, 500	99
Total	1	3, 500	
AUSTRALIA:			
Adelaide, University of	1	17, 797	99
Total	1	17, 797	
BELGIUM:			
Ghent, University of	1	9, 000	100
Institut Bunge	1	14, 325	99
Total	2	23, 325	
BRAZIL:			
Brazil, University of	1	8, 740	100
Sao Paulo, University of	2	17, 430	100
Total	3	26, 170	
CANADA:			
Alberta, University of	1	18, 050	100
British Columbia, University of	1	9, 200	101
Manitoba, University of	1	13, 765	101

State and Institution	Number	Dollars	Page No.
Foreign Countries—Continued			
CANADA—Continued			
McGill University	3	31, 050	101
Montreal, University of	2	34, 500	101
Ontario Veterinary College	1	19, 600	100
Royal Victoria Hospital	1	7, 650	101
Saskatchewan, University of	3	47, 438	101
Toronto, University of	1	13, 110	101
Total	14	194, 363	
CHILE:			
Chile, University of	3	34, 580	102
Total	3	34, 580	
COLOMBIA:			
Antioquia University of, Medical School	1	6, 903	102
Hospital de San Juan de Dios	1	1, 800	102
Total	2	8, 703	
CONGO, REPUBLIC OF:			
Laboratoire Medical Provincial	1	27, 951	107
Total	1	27, 951	
DENMARK:			
Copenhagen, University of	1	12, 000	103
Total	1	12, 000	
EL SALVADOR:			
El Salvador, University of	1	31, 604	103
Total	1	31, 604	

State and Institution	Number	Dollars	Page No.
Foreign Countries—Continued			
FINLAND:			
Helsinki, University of	1	12, 420	103
Institute of Occupational Health	1	5, 000	103
Total	2	17, 420	
GREECE:			
Athens, University of	1	5, 000	103
Total	1	5, 000	
INDIA:			
Indian Institute for Biochemistry and Experimental Medicine	1	10, 925	103
Total	1	10, 925	
IRELAND:			
Medical Research Council of Ireland Labs	1	15, 985	104
Total	1	15, 985	
ISRAEL:			
Beilinson Hospital—Medical Research Institute	1	17, 652	104
Government Hospital	1	25, 000	104
Hasharon Hospital	1	7, 245	104
Hebrew University	4	95, 810	104
Total	7	145, 707	
ITALY:			
Center Against Cardiovascular Disease and Rheumatic Fever of Rome	1	6, 000	105
Foreign Countries—Continued			
ITALY—Continued			
Genoa, University of	2	25, 500	105
Naples, University of	1	11, 017	105
Total	4	42, 517	
JAPAN:			
Osaka University	1	10, 000	105
Tokyo Medical and Dental University	1	27, 383	105
Total	2	37, 383	
KOREA:			
Yonsei University School of Medicine	2	20, 930	106
Total	2	20, 930	
LEBANON:			
American University of Beirut	2	13, 685	106
Total	2	13, 685	
NETHERLANDS:			
Excerpta Medica Foundation	2	23, 575	106
Leiden, University of	1	24, 000	106
Netherlands Nutrition Council	1	6, 260	106
Total	4	53, 835	
PERU:			
Brain Research Center Peruvian Armed Forces	1	24, 867	107
Universidad Nacional Mayor de San Marcos	2	27, 800	107
Total	3	52, 667	

RESEARCH PROJECT GRANTS TOTALS AND INSTITUTION INDEX—Continued

State and Institution	Number	Dollars	Page No.
Foreign Countries—Continued			
SWEDEN:			
Gothenburg, University of	3	35, 348	107
Isotope Laboratory of Cardiovascular Clinic South Hospital	1	27, 149	108
Karolinska Institutet	5	139, 924	108
Lund, University of	3	76, 682	108
Uppsala, University of	1	5, 750	108
Total	13	284, 853	
SOUTH AFRICA, REPUBLIC OF:			
Cape Town, University of	2	33, 925	108
Natal University	1	4, 830	109
South African Institute for Medical Research	2	34, 640	109
Total	5	73, 395	
UNITED KINGDOM:			
Birmingham University	1	8, 450	109
Edinburgh, University of	1	14, 881	109
Foreign Countries—Continued			
UNITED KINGDOM—Continued			
London, University of	1	20, 000	109
National Institute for Research in Dairying	1	14, 317	110
Oxford, University of	2	9, 775	109
Total	6	67, 423	
WEST GERMANY:			
Gottingen, University of	1	10, 879	110
Total	1	10, 879	
YUGOSLAVIA:			
Central Institute of Hygiene	1	5, 000	110
Total	1	5, 000	
Foreign countries total	83	1, 237, 597	
GRAND TOTAL	2, 339	52, 490, 633	

training grants

GRANTS IN SUPPORT OF TRAINING PROGRAMS FOR MEDICAL RESEARCH AND SERVICE

ARRANGEMENT OF MATERIAL AND GRANT NUMBER KEY—TABLE TWO

Material in this table is arranged alphabetically under two main divisions: (1) States and (2) Territories. No training grants were awarded to foreign countries in fiscal year 1961.

Under the above two main divisions, the material is arranged alphabetically by *city*, then alphabetically by *institution*.

Under each institution, material is arranged alphabetically by the name of the Program Director. Following the primary *grant number*, letters and numerals indicate further detail concerning the grant. The letters have denotive meanings as follows: C=Continuation Grant and S=Supplementary Grant. When a numeral follows any such suffix letter it indicates the ordinal number of the action. Thus, C2 means second *continuation* year and S1 means first *supplement* to the grant as specified by the preceding symbols.

Program Director	General Area of Training	Grant No.	Amount
ALABAMA			
BIRMINGHAM			
Alabama, University of			
Harrison, Tinsley R	Undergraduate, clinical	H-0542C11	$24, 997
Harrison, Tinsley R	Medical cardiology	H-5148C4	37, 016
Harrison, Tinsley R	do	H-5148C4S2	19, 520
Institution total, 3 grants, $81,533			
STATE TOTAL, 3 grants			81, 533
ALASKA None			
ARIZONA None			
ARKANSAS			
LITTLE ROCK			
Arkansas, University of			
Ebert, Richard V	Pulmonary	H-5333C1S1	7, 047
Ebert, Richard V	do	H-5333C2	28, 188
Taylor, James S	Undergraduate, clinical	H-5016C8	25, 000
Institution total, 3 grants, $60,235			
STATE TOTAL, 3 grants			60, 235
CALIFORNIA			
BERKELEY			
California, University of			
Chaikoff, I. L	Biochemistry	H-5302C1S1	12, 821
Chaikoff, I. L	do	H-5302C2	29, 826
Stallones, R. A	Undergraduate—chronic disease	H-5081C5	15, 000
Institution total, 3 grants, $57,647			
LOMA LINDA			
College of Medical Evangelists			
MacPherson, W. E	Multidepartmental, preclinical	H-5171C3S1	11, 030
MacPherson, W. E	do	H-5171C4	26, 752
Institution total, 2 grants, $37,782			

Program Director	General Area of Training	Grant No.	Amount
CALIFORNIA—Continued			
LOS ANGELES			
California, University of			
Assali, N. S.	Obstetrics—gynecology	H–5298C2	$34, 657
Ball, Gordon H	Physiology	H–5166C4	33, 874
Griffith, Wendell H	Lipid metabolism	H–5306C1S1	10, 431
Griffith, Wendell H	do	H–5306C2	24, 244
Kattus, Albert A., Jr	Undergraduate, clinical	H–5056C6	25, 000
Maloney, James V., Jr	Surgical cardiology	H–5357C2	44, 331
Institution total, 6 grants, $172,537			
California, University of—Medical Center			
Moss, Arthur J	Pediatric cardiology	H–5449	19, 440
Institution total, 1 grant, $19,440			
Children's Hospital Society of Los Angeles			
Fyler, Donald C	Pediatric cardiology	H–5308C1S1	1, 500
Fyler, Donald C	do	H–5308C1S2	8, 785
Fyler, Donald C	do	H–5308C2	28, 620
Fyler, Donald C	do	H–5308C1S3	540
Institution total, 4 grants, $39,445			
College of Medical Evangelists			
Griggs, Donald E	Undergraduate, clinical	H–5040C8	25, 000
Institution total, 1 grant, $25,000			
College of Osteopathic Physicans and Surgeons			
Daniel, Delmar J	Undergraduate, clinical	H–5032C8	25, 000
Institution total, 1 grant, $25,000			
Southern California, University of			
Griffith, George C	Undergraduate, clinical	H–0296C11	25, 000
Institution total, 1 grant, $25,000			
SAN FRANCISCO			
California, University of			
Comroe, Julius H., Jr	Multidepartmental, clinical-preclinical	H–5251C3	70, 808
Comroe, Julius H., Jr	do	H–5251C3S1	19, 980
Comroe, Julius H., Jr	do	H–5251C3S2	59, 007
Moffitt H. C., Jr	Undergraduate, clinical	H–0549C11	25, 000

Program Director	General Area of Training	Grant No.	Amount
CALIFORNIA—Continued			
SAN FRANCISCO—Continued			
California, University of—Continued			
Nahm, Helen	Nursing	H–5426C2	$10, 800
Sokolow, Maurice	Medical cardiology	H–5416C1	31, 527
Sokolow, Maurice	----do	H–5416C1S1	1, 038
Sokolow, Maurice	----do	H–5416C2	32. 565
Institution total, 8 grants, $250,725			
STANFORD			
Stanford University			
Gerbode, Frank	Surgical cardiology	H–5349C1S1	6, 480
Gerbode Frank	----do	H–5349C2	25, 920
Hultgren, Herbert N	Medical cardiology	H–5448C1	12, 680
Rytand, David A	Undergraduate, clinical	H–5107C6	25, 000
Institution total, 4 grants, $70,080			
STATE TOTAL, 31 grants			722, 656
COLORADO			
DENVER			
Colorado, University of			
Blount, S. G., Jr	Medical cardiology	H–5390C1S1	6, 480
Blount, S. G., Jr	Undergraduate, clinical	H–0286C11	25, 000
Blount, S. G., Jr	Medical cardiology	H–5390C2	25, 920
Filley, Giles F	Pulmonary	H–5450S1	6, 170
Filley Giles, F	----do	H–5450C1	19, 602
Swan, Henry	Surgical cardiology	H–5157C4	9, 860
Swan, Henry	----do	H–5157C5	30, 548
Institution total, 7 grants, $123,580			
STATE TOTAL, 7 grants			123, 580

Program Director	General Area of Training	Grant No.	Amount
CONNECTICUT			
HARTFORD			
Hartford Hospital			
McLean, Charles E	Developmental training	H-5479	$25, 380
McLean, Charles E	----do	H-5479S1	14, 200
McLean, Charles E	----do	H-5479C1	25, 380
Institution total, 3 grants, $64,960			
NEW HAVEN			
Yale University			
Cohart, Edward M	Undergraduate—chronic disease	H-5085C6	15, 000
Goodyer, Allen V	Multidepartmental, clinical	H-5429C1	52, 159
Goodyer, Allen V	Undergraduate, clinical	H-0284C11	25, 000
Liebow, Averill A	Pathology	H-5153C3S1	4, 860
Liebow, Averill A	----do	H-5153C4	22, 680
Institution total, 5 grants, $119,699			
STATE TOTAL, 8 grants			184, 659
DELAWARE (None)			
DISTRICT OF COLUMBIA			
WASHINGTON, D.C.			
Catholic University of America			
Mattingly, C. B	Nursing—graduate cardiovascular	H-5174C4	50, 339
Mattingly, C. B	----do	H-5174C5	50, 339
Institution total, 2 grants, $100,678			
Children's Hospital Research Foundation			
Berman, Leonard B	Renal	H-5353C1S1	1, 199
Berman, Leonard B	----do	H-5353C2	24, 948
Institution total, 2 grants, $26,147			
George Washington University			
Evans, John M	Undergraduate, clinical	H-5015C8	25, 000
Evans, John M	Medical cardiology	H-5311C1	21, 600
Evans, John M	----do	H-5311C1S1	22, 500
Hogben, C. A	Physiology	H-5358C1S1	6, 601
Hogben, C. A	----do	H-5358C2	29, 446
Institution total, 5 grants, $105,147			

Program Director	General Area of Training	Grant No.	Amount
DISTRICT OF COLUMBIA—Continued			
Georgetown University			
Harvey, W. P	Medical cardiology	H-5433C1	$32, 940
Kyle, Laurence H	Undergraduate, clinical	H-5003C11	25, 000
Luchsinger, Peter C	Pulmonary	H-5454C1	29, 484
Schreiner, George E	Renal	H-5256C2	10, 346
Institution total, 4 grants, $97,770			
Howard University			
Booker, Walter M	Pharmacology	H-5384C1S1	9, 858
Booker, Walter M	----do	H-5384C2	40, 000
Johnson, John B	Undergraduate, clinical	H-5000C11	25, 000
Johnson, John B	Medical cardiology	H-5460S2	544
Johnson, John B	----do	H-5460C1	41, 000
Johnson, John B	----do	H-5460C1S1	7, 171
Institution total, 6 grants, $123,573			
STATE TOTAL, 19 grants			453, 315
FLORIDA			
CORAL GABLES			
Miami, University of			
Beber, Charles R	Gerontology	H-5208C3	25, 000
Boucek, Robert J	Medical cardiology	H-5463C1	55, 391
Lane, Charles E	Physiology	H-5489	12, 058
Lane, Charles E	----do	H-5489C1	65, 984
Ring, Gordon C	Undergraduate, clinical	H-5058C7	25, 000
Institution total, 5 grants, $183,433			
GAINESVILLE			
Florida, University of			
Taylor, W. J	Undergraduate, clinical	H-5108C5	25, 000
Taylor, W. J	Multidepartmental, clinical	H-5493	54, 000
Institution total, 2 grants, $79,000			
JACKSONVILLE			
Florida State Board of Health			
Hardy, Albert V	Public Health	H-5431C1	33, 091
Institution total, 1 grant, $33,091			

Program Director	General Area of Training	Grant No.	Amount
FLORIDA—Continued			
Jacksonville Hospital's Educational Program, Inc.			
Michael, Max, Jr	Developmental training	H-5474	$65, 340
Institution total, 1 grant, $65,340			
STATE TOTAL, 9 grants			360, 864
GEORGIA			
ATLANTA			
Emory University			
Hurst, J. W	Undergraduate, clinical	H-0271C11	25, 000
Richardson, Arthur	Multidepartmental, clinical-preclinical	H-5380C1	110, 484
Richardson, Arthur	----do	H-5380C1S1	101, 277
Weens, H. S	Radiology	H-5494	32, 936
Institution total, 4 grants, $269,697			
Grady Memorial Hospital			
Ferguson, Ira A	Surgical cardiology	H-5156C3	39, 459
Ferguson, Ira A	----do	H-5156C3S1	33, 480
Institution total, 2 grants, $72,939			
AUGUSTA			
Georgia, Medical College of			
Hamilton, W. F	Physiology cardiovascular	H-5044C7	49, 140
Hamilton, W. F	----do	H-5044C7S1	4, 800
Hamilton, W. F	----do	H-5044C8	49, 140
Witham, Abner C	Undergraduate, clinical	H-5031C8	25, 000
Wood, J. E	Medical cardiology	H-5442C1	34, 020
Institution total, 5 grants, $162,100			
STATE TOTAL, 11 grants			5C4, 736

HAWAII (None)

IDAHO (None)

Program Director	General Area of Training	Grant No.	Amount
ILLINOIS			
CHICAGO			
Chicago College of Osteopathy			
Patterson, W. R	Undergraduate, clinical	H-5029C8	$25,000
Institution total, 1 grant, $25,000			
Chicago Medical School			
Luisada, Aldo A	Undergraduate, clinical	H-5002C11	25,000
Luisada, Aldo A	Medical cardiology	H-5182C1S1	9,750
Luisada, Aldo A	do	H-5182C2	39,000
Institution total, 3 grants, $73,750			
Chicago, University of			
Bay, Emmet B	Undergraduate, clinical	H-0266C11	25,000
Rabinowitz, Murray	Medical cardiology	H-5447C1	53,000
Institution total, 2 grants, $78,000			
Chicago, University of, Clinics			
Potter, Edith L	Pathology	H-5271C3	10,800
Institution total, 1 grant, $10,800			
Children's Memorial Hospital			
Hsia, David Y	Genetics	H-5347C2	7,560
Institution total, 1 grant, $7,560			
Illinois, University of			
Bennett, Granville	Undergraduate, clinical	H-0300C11	25,000
Reynolds, S. R	Physiology	H-5266C2	16,200
Reynolds, S. R	do	H-5266C2S1	13,500
Institution total, 3 grants, $54,700			
Loyola University			
O'Brien, George F	Undergraduate, clinical	H-0302C11	25,000
Institution total, 1 grant, $25,000			
Michael Reese Hospital and Medical Center			
Katz, Louis N	Medical cardiology research	H-5252C2S1	9,720
Katz, Louis N	do	H-5252C3	35,586
Institution total, 2 grants, $45,306			

Program Director	General Area of Training	Grant No.	Amount
ILLINOIS—Continued			
Northwestern University			
Colwell, Arthur R	Undergraduate, clinical	H-5017C8	$25, 000
Earle, David P	Multidepartmental, clinical-preclinical	H-5344C1S1	1, 350
Earle, David P	----do	H-5344C2	44, 280
Gray, John S	Physiology	H-5325C1	19, 505
Gray, John S	----do	H-5325C1S1	17, 500
Institution total, 5 grants, $107,635			
EVANSTON			
Association of American Medical Colleges			
Berry, George P	Symposium	H-5076C5	25, 000
Institution total, 1 grant, $25,000			
URBANA			
Illinois, University of			
Kummerow, Fred A	Lipid metabolism	H-5368C2	27, 000
Institution total, 1 grant, $27,000			
STATE TOTAL, 21 grants			479, 751
INDIANA			
BLOOMINGTON			
Indiana University Foundation Research Division			
Hickam, John B	Pulmonary	H-5363C1	59, 066
Hickam, John B	----do	H-5363C1S1	54, 054
Irwin, Glenn W	Clinical therapeutics	H-5461C1	46, 332
Judson, Walter E	Undergraduate, clinical	H-5232C3	25, 000
Shumacker, Harris B	Surgical cardiology	H-5179C3	14, 250
Shumacker, Harris B	----do	H-5179C3S1	11, 875
Institution total, 6 grants, $210,577			
LAFAYETTE			
Purdue University			
Eichhorn, R. L	Public health	H-5428C1	9, 720
Institution total, 1 grant, $9,720			
STATE TOTAL, 7 grants			220, 297

Program Director	General Area of Training	Grant No.	Amount
IOWA			
DES MOINES			
College of Osteopathic Medicine and Surgery			
Strong, William B	Undergraduate, clinical	H-5010C8	$25,000
Institution total, 1 grant, $25,000			
IOWA CITY			
Iowa State, University of			
Bean, William B	Undergraduate, clinical	H-0245C11	25,000
Kirkendall, Walter	Medical cardiology	H-5367C1	41,688
Kirkendall, Walter	----do	H-5367C1S1	9,651
Institution total, 3 grants, $76,339			
STATE TOTAL, 4 grants			101,339
KANSAS			
KANSAS CITY			
Kansas, University of, Medical Center			
Crockett, James E	Undergraduate, clinical	H-0269C11	24,997
Institution total, 1 grant, $24,997			
STATE TOTAL, 1 grant			24,997
KENTUCKY			
LEXINGTON			
Kentucky, University of			
Willard, William R	Undergraduate, clinical	H-5354C1	24,948
Institution total, 1 grant, $24,948			
LOUISVILLE			
Louisville, University of			
Towery, Beverly T	Undergraduate, clinical	H-5057C8	25,000
Institution total, 1 grant, $25,000			
STATE TOTAL, 2 grants			49,948

Program Director	General Area of Training	Grant No.	Amount
LOUISIANA			
NEW ORLEANS			
Louisiana State University			
Akenhead, W. R.	Undergraduate, clinical	H-0234C11	$25,000
Goss, Charles M.	Anatomy	H-5111C3	12,096
Holman, Russell L.	Pathology	H-5305C2	28,296
McGill, Henry C.	....do	H-5305C2S1	12,106
Institution total, 4 grants, $77,498			
Tulane University			
Burch, George E.	Undergraduate, clinical	H-0534C11	25,000
Burch, George E.	Medical cardiology research	H-5278C3	41,173
Creech, Oscar, Jr.	Surgical cardiology	H-5170C3S1	16,308
Creech, Oscar, Jr.	....do	H-5170C4	30,527
Goldsmith, Grace A.	Nutrition	H-5236C2S1	19,215
Goldsmith, Grace A.	....do	H-5236C3	64,800
Hack, Marvin H.	Summer technology	H-5133C5	65,000
Nice, Charles M., Jr.	Radiology cardiovascular	H-5304C2	15,400
Paterson, J. C.	Undergraduate—chronic disease	H-5080C7	15,000
Institution total, 9 grants, $292,423			
STATE TOTAL, 13 grants			369,921
MAINE			
PORTLAND			
Maine Medical Center			
Martin, Ralf	Developmental training	H-5475	21,600
Martin, Ralf	....do	H-5475S1	40,332
Institution total, 2 grants, $61,932			
STATE TOTAL, 2 grants			61,932
MARYLAND			
BALTIMORE			
Johns Hopkins University			
Andrus, E. C.	Undergraduate, clinical	H-0260C11	25,000
Andrus, E. C.	Multidepartmental, clinical	H-5159C3S2	24,848
Andrus, E. C.	....do	H-5159C4	74,545

Program Director	General Area of Training	Grant No.	Amount
MARYLAND—Continued			
BALTIMORE—Continued			
John Hopkins University—Continued			
Lilienfeld, A. M	Undergraduate—chronic disease	H–5082C6	$15, 000
Lilienfeld, A. M	Public health	H–5297C2	47, 000
McKusick, Victor A	Medicine	H–5262C2	62, 999
McKusick, Victor A	Genetics	H–5262C2S1	10, 300
Morgan, Russell H	Radiology	H–5405C1	24, 840
Morgan, Russell H	----do	H–5405C1S1	10, 800
Riley, Richard L	Pulmonary	H–5453C1	41, 040
Riley, Richard L	----do	H–5453C1S1	10, 310
Taussig, Helen B	Pediatric cardiology	H–5237C2S1	12, 000
Taussig, Helen B	----do	H–5237C3	25, 812
Institution total, 13 grants, $384,494			
Maryland, University of			
Fisher, Russel S	Pathology	H–5163C4	30, 024
Revell, Samuel T	Renal	H–5348C2	20, 736
Scherlis, Leonard	Undergraduate, clinical	H–5013C8	25, 000
Institution total, 3 grants, $75,760			
Sinai Hospital of Baltimore, Inc.			
Turner, David A	Lipid metabolism	H–5399C1S2	5, 832
Turner, David A	----do	H–5399C2	27, 000
Institution total, 2 grants, $32,832			
STATE TOTAL, 18 grants			493, 086
MASSACHUSETTS			
BOSTON			
Beth Israel Hospital			
Blumgart, Herrman L	Medical cardiology	H–5235C3	53, 937
Fine, Jacob	Surgical cardiology	H–5422C1	26, 951
Fine, Jacob	----do	H–5422C2	26, 951
Institution total, 3 grants, $107,839			

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Program Director	General Area of Training	Grant No.	Amount
MASSACHUSETTS—Continued			
BOSTON—Continued			
Boston University			
Boyd, William C	Genetics	H-5388C1	$29, 188
Fulton, George P	Physiology	H-5411C1	28, 890
Fulton, George P	....do	H-5411C1S1	24, 075
Wilkins, Robert W	Undergraduate, clinical	H-5042C8	25, 000
Wilkins, Robert W	Multidepartmental, clinical-preclinical	H-5136C3	60, 000
Wilkins, Robert W	....do	H-5136C3S1	75, 474
Institution total, 6 grants, $242,627			
Children's Hospital Medical Center			
Diamond, Louis K	Hematology	H-5255C2	29, 870
Diamond, Louis K	....do	H-5255C2S1	24, 892
Nadas, Alexander S	Pediatric cardiology	H-5310C2	48, 338
Institution total, 3 grants, $103,100			
Massachusetts General Hospitals			
Bland, Edward F	Medical cardiology	H-5196C3S1	8, 505
Bland, Edward F	....do	H-5196C3S2	993
Bland, Edward F	....do	H-5196C4	34, 135
Talbot, Nathan B	Pediatric cardiology	H-5139C4	27, 000
Talbot, Nathan B	....do	H-5139C4S1	28, 260
Institution total, 5 grants, $98,893			
New England Medical Center			
Proger, Samuel	Multidepartmental, clinical-preclinical	H-5391C2	64, 800
Proger, Samuel	....do	H-5391C2S1	5, 400
Institution total, 2 grants, $70,200			
New England Center Hospital			
Schwartz, William B	Renal	H-5309C1S1	7, 560
Schwartz, William B	....do	H-5309C2	39, 744
Institution total, 2 grants, $47,304			
Peter Bent Brigham Hospital			
Dammin, Gustave J	Pathology	H-5274C2	31, 142
Dammin, Gustave J	....do	H-5274C2S1	25, 952
Institution total, 2 grants, $57,094			
Simmons College			
Dana, Bess S	Social workers, cardiovascular	H-5211C3	20, 800
Dana, Bess S	....do	H-5211C3S1	18, 330
Institution total, 2 grants, $39,130			

Program Director	General Area of Training	Grant No.	Amount
MASSACHUSETTS—Continued			
BOSTON—Continued			
St. Elizabeths Hospital			
Stefanini, Mario	Hematology	H-5435C1	$15, 984
Institution total, 1 grant, $15,984			
Tufts University			
Sise, Herbert S	Undergraduate, clinical	H-5012C8	25, 000
Institution total, 1 grant, $25,000			
CAMBRIDGE			
Harvard University			
Bland, Edward F	Undergraduate, clinical	H-0297C11	25, 000
Dexter, Lewis	Medical cardiology	H-5234C3	27, 000
Ellis, Laurence B	----do	H-5244C2S1	5, 164
Ellis, Laurence B	----do	H-5244C3	22, 691
Ellis, Laurence B	----do	H-5244C3S1	4, 320
Moore, Francis D	Surgical cardiology	H-5231C3	15, 000
Rutstein, David D	Public health	H-5473C1	20, 500
Snegireff, Leonid S	Undergraduate—chronic disease	H-5083C6	15, 000
Stare, Fredrick J	Nutrition	H-5242C2S1	10, 800
Stare, Fredrick J	----do	H-5242C3	43, 751
Tyler, John M	Pulmonary	H-5379C1	28, 960
Warren, Richard	Surgical cardiology	H-5291C2	7, 560
Warren, Richard	----do	H-5291C2S1	5, 670
Institution total, 13 grants, $231,416			
WOODS HOLE			
Marine Biological Laboratory			
Kuffler, Stephen W	Summer technology	H-5143C4	21, 654
Institution total, 1 grant, $21,654			
WORCESTER			
St. Vincent Hospital			
Stapleton, John F	Developmental training	H-5477	16, 350
Institution total, 1 grant, $16,350			
STATE TOTAL, 42 grants			1, 076, 591

Program Director	General Area of Training	Grant No.	Amount
MICHIGAN			
ANN ARBOR			
Michigan, University of			
Getting, Vlado A	Undergraduate—chronic disease	H-5004C11	$15,000
Gould, S. E	Pathology	H-5548	4,696
Hoobler, Sibley W	Medical cardiology	H-5465C1	25,861
Johnston, Franklin	Undergraduate, clinical	H-5114C5	25,000
Institution total, 4 grants, $70,557			
DETROIT			
Wayne State University			
Bing, Richard J	Medical cardiology	H-5457C1	42,000
Clapper, Muir	Undergraduate, clinical	H-0239C11	25,000
Institution total, 2 grants, $67,000			
GRAND RAPIDS			
Blodgett Memorial Hospital			
Avery, Noyes L	Developmental training	H-5482	21,600
Institution total, 1 grant, $21,600			
STATE TOTAL, 7 grants			159,157
MINNESOTA			
MINNEAPOLIS			
Minneapolis General Hospital Research Foundation, Inc.			
Hitchcock, Claude R	Surgical cardiology	H-5376C2	18,684
Institution total, 1 grant, $18,684			
Minnesota, University of			
Anderson, Gaylord W	Undergraduate—chronic disease	H-5086C7	15,000
Cavert, H. M	Undergraduate, clinical	H-0290C11	25,000
Cavert, H. M	Multidepartmental, clinical-preclinical	H-5222C3	120,000
Cavert, H. M	----do	H-5222C4	119,988
Good, Robert A	Immunology	H-5462C1	54,247
Schuman, Leonard M	Symposium	H-5318C2	2,700
Visscher, Maurice B	Physiology	H-5138C4	58,684
Visscher, Maurice B	----do	H-5138C5	58,684
Wangensteen, Owen H	Surgical cardiology	H-5144C4	102,278
Wangensteen, Owen H	----do	H-5144C4S1	85,230

Program Director	General Area of Training	Grant No.	Amount
MINNESOTA—Continued			
MINNEAPOLIS—Continued			
Minnesota, University of—Continued			
Watson, Dennis W	Immunology	H-5360C1	$24,902
Watson, Dennis W	----do	H-5360C1S1	18,676
Institution total, 12 grants, $685,389			
STATE TOTAL, 13 grants			704,673
MISSISSIPPI			
JACKSON			
Mississippi, University of			
Guyton, Arthur C	Undergraduate, clinical	H-5001C11	25,000
Guyton, Arthur C	Physiology	H-5184C2S1	8,708
Guyton, Arthur C	----do	H-5184C3	29,504
Snavely, J. R	Medical cardiology	H-5458C1	11,880
Institution total, 4 grants, $75,092			
STATE TOTAL, 4 grants			75,092
MISSOURI			
COLUMBIA			
Missouri, University of			
Ray, C. T	Undergraduate, clinical	H-5055C7	25,000
Ray, C. T	Medical cardiology	H-5373C2	25,056
Institution total, 2 grants, $50,056			
KANSAS CITY			
Kansas City College of Osteopathy and Surgery			
Steinberg, Milton S	Undergraduate, clinical	H-5026C8	25,000
Institution total, 1 grant, $25,000			
KIRKSVILLE			
Kirksville College of Osteopathy and Surgery			
Tilley, R. M	Undergraduate, clinical	H-5037C8	25,000
Institution total, 1 grant, $25,000			

Program Director	General Area of Training	Grant No.	Amount
MISSOURI—Continued			
ST. LOUIS			
St. Louis University			
Hanlon, C. R	Surgical cardiology	H–5299C2	$11, 944
Hanlon, C. R	do	H–5299C3	11, 944
Wegria, Rene	Undergraduate, clinical	H–0347C11	25, 000
Institution total, 3 grants, $48,888			
Washington University			
Smith, John R	Undergraduate, clinical	H–0247C11	25, 000
Smith, John R	Medical cardiology	H–5332C1	62, 424
Smith, John R	do	H–5332C2	62, 424
Institution total, 3 grants, $149,848			
STATE TOTAL, 10 grants			298, 792
MONTANA (None)			
NEBRASKA			
OMAHA			
Creighton University			
Brody, Alfred W	Physiology	H–5506	19, 738
Heaney, Robert P	Undergraduate, clinical	H–5018C8	25, 000
Institution total, 2 grants, $44,738			
Nebraska, University of			
Dunn, F. L	Undergraduate, clinical	H–0227C11	25, 000
Dunn, F. L	Medical electronics	H–5177C3S1	5, 400
Dunn, F. L	do	H–5177C4	36, 008
Institution total, 3 grants, $66,408			
STATE TOTAL, 5 grants			111, 146
NEVADA (None)			

Program Director	General Area of Training	Grant No.	Amount
NEW HAMPSHIRE			
HANOVER			
Dartmouth College			
Heyl, Henry L	Summer technology	H-5303C1S1	$1, 296
Heyl, Henry L	do	H-5303C2	12, 960
Tenney, S. M	Multidepartmental, preclinical	H-5322S1	26, 406
Tenney, S. M	do	H-5322C1	54, 000
Tenney, S. M	Undergraduate, clinical	H-5134C5	14, 796
Institution total, 5 grants, $109,458			
STATE TOTAL, 5 grants			109, 458
NEW JERSEY			
JERSEY CITY			
Seton Hall College of Medicine and Dentistry			
Jeghers, Harold	Undergraduate, clinical	H-5259C2	25, 000
Institution total, 1 grant, $25,000			
NEWARK			
St. Michael's Hospital			
Butler, John J	Developmental training	H-5472	20, 736
Butler, John J	do	H-5472S1	27, 756
Institution total, 2 grants, $48,492			
STATE TOTAL, 3 grants			73, 492
NEW MEXICO (None)			
NEW YORK			
ALBANY			
Research Foundation of State University of New York			
Brooks, Chandler M	Physiology	H-5282C1S1	11, 297
Brooks, Chandler M	do	H-5282C2	50, 220
Dock, William	Undergraduate, clinical	H-0303C11	24, 999
Husson, George S	Pediatric cardiology	H-5434C1	21, 632
Karlson Karl E	Surgical cardiology	H-5440	23, 760
Lyons, Richard H	Undergraduate, clinical	H-0274C11	25, 000

Program Director	General Area of Training	Grant No.	Amount
NEW YORK—Continued			
ALBANY—Continued			
Research Foundation of State University of New York—Continued			
Lyons, Richard H	Multidepartmental, clinical-preclinical	H-5410C1	$16,200
Lyons, Richard H	----do	H-5410C1S1	17,280
Lyons, Richard H	----do	H-5410C1S2	59,400
Institution total, 9 grants, $249,788			
Union University, Albany Medical College			
Formel, Paul F	Multidepartmental, clinical-preclinical	H-5263C2	19,440
Formel, Paul F	----do	H-5263C2S1	17,550
Nelson, William P	Developmental training	H-5470	32,400
Nelson, William P	----do	H-5470S1	26,469
Wiggers, Harold C	Undergraduate, clincial	H-5014C8	25,000
Institution total, 5 grants, $120,859			
BRONX			
Montefiore Hospital			
Haimovici, Henry	Surgical cardiology	H-5260C2	8,000
Haimovici, Henry	----do	H-5260C2S1	6,667
Institution total, 2 grants, $14,667			
BUFFALO			
Buffalo, University of			
Lambert, Edward C	Pediatric cardiology	H-5335C2	9,888
Rodbard, Simon	Medical cardiology	H-5336C2	10,000
Witebsky, Ernest	Undergraduate, clinical	H-0294C11	25,000
Institution total, 3 grants, $44,888			
NEW YORK CITY			
Columbia University			
Blumenthal, Sidney	Pediatric cardiology	H-5389C1	29,160
Blumenthal, Sidney	----do	H-5389C1S1	24,300
Bradley, Stanley E	Undergraduate, clinical	H-5019C8	24,948
Cournard, Andre	Physiology	H-5443C1	39,158
Goldwater, Leonard	Undergraduate—Chronic disease	H-5079C6	14,990
Sebrell, W. H., Jr	Nutrition	H-5312C2	12,500
Institution total, 6 grants, $145,056			

Program Director	General Area of Training	Grant No.	Amount
NEW YORK—Continued			
NEW YORK CITY—Continued			
Teachers College—Columbia University			
Nelson, Katherine R	Nursing—Graduate cardiovascular	H–5115C5	$45, 400
Nelson, Katherine R	----do	H–5115C5S1	37, 833
Institution total, 2 grants, $83,233			
Cornell University			
Lukas, Daniel S	Undergraduate, clinical	H–0348C11	25, 000
Pitts, Robert F	Renal	H–5264C2S1	9, 936
Pitts, Robert F	----do	H–5264C3	39, 256
Wright, Irving S	Peripheral vascular disease	H–5315C2	38, 558
Wright, Irving S	Symposium	H–5317C2	41, 796
Institution total, 5 grants, $154,546			
Institute for Advancement of Medical Communication			
Shepard, William P	Scientific information	H–5414C1	19, 634
Shepard, William P	----do	H–5414C1S1	31, 347
Shepard, William P	----do	H–5414C1S2	46, 728
Institution total, 3 grants, $97,709			
Lenox Hill Hospital			
Kossmann, Charles E	Medical cardiology	H–5268C2	21, 000
Institution total, 1 grant, $21,000			
Mount Sinai Hospital			
Friedberg, C. K	Medical cardiology	H–5240C2	19, 440
Friedberg, C. K	----do	H–5240C2S2	17, 820
Levitt, Marvin F	Renal	H–5505	21, 432
Institution total, 3 grants, $58,692			
New York Medical College			
Boyd, Linn J	Undergraduate, clinical	H–5027C8	24, 624
Institution total, 1 grant, $24,624			
New York University			
Kossmann, Charles E	Undergraduate, clinical	H–0558C11	25, 000
Institution total, 1 grant, $25,000			

Program Director	General Area of Training	Grant No.	Amount
NEW YORK—Continued			
NEW YORK CITY—Continued			
New York University School of Medicine			
MacLeod, Colin M	Genetics	H-5307C1S1	$7,905
MacLeod, Colin M	----do	H-5307C2	61,020
Institution total, 2 grants, $68,925			
Yeshiva University			
Barnett, Henry L	Renal	H-5267C2	35,000
Barnett, Henry L	----do	H-5267C2S1	39,597
Barnett, Henry L	----do	H-5267C2S2	29,165
Eder, Howard A	Lipid metabolism	H-5273C3	22,680
London, Irving M	Undergraduate, clinical	H-5110C5	24,998
Romney, Seymour L	Obstetrics-gynecology	H-5408C1	27,000
Romney, Seymour L	----do	H-5408C1S1	18,330
Rudolph, Abraham M	Cardiology	H-5532	46,814
White, Abraham	Biochemistry	H-5265C2S1	7,457
White, Abraham	----do	H-5265C3	30,240
Williams, M. H., Jr	Pulmonary	H-5446C1	38,300
Institution total, 11 grants, $319,581			
ROCHESTER			
Rochester, University of			
Young, Lawrence E	Undergraduate, clinical	H-5054C7	25,000
Institution total, 1 grant, $25,000			
STATE TOTAL, 55 grants			1,453,568
NORTH CAROLINA			
CHAPEL HILL			
North Carolina, University of			
Cassel, John	Undergraduate—chronic disease	H-5084C7	16,500
Craige, Ernest	Undergraduate, clinical	H-5033C8	25,000
Craige, Ernest	Medical cardiology	H-5288C2	8,856
Institution total, 3 grants, $50,356			

Program Director	General Area of Training	Grant No.	Amount
NORTH CAROLINA—Continued			
DURHAM			
Duke University			
Grimson, Keith S	Undergraduate, clinical	H-0257C11	$25, 000
Harris, Jerome S	Pedriatic cardiology	H-5372C1S1	3, 341
Harris, Jerome S	----do	H-5372C2	22, 140
Howell, Doris A	Hematology	H-5478	14, 980
Howell, Doris A	----do	H-5478S1	15, 537
Schmidt-Neilsen, B	Physiology	H-5219C1	25, 000
Schmidt-Neilsen, B	----do	H-5219C1S1	20, 833
Sealy, Will C	Surgical cardiology	H-5284C2	13, 500
Sealy, Will C	----do	H-5284C2S1	10, 530
Stead, Eugene A., Jr	Medical cardiology	H-5369C1S1	894
Stead, Eugene A., Jr	----do	H-5369C2	101, 787
Stead, Eugene A., Jr	----do	H-5369C2S1	1, 407
Institution total, 12 grants, $254,949			
WINSTON SALEM			
Wake Forest College			
Bradshaw, H. H	Surgical cardiology	H-5257C2	7, 000
Bradshaw, H. H	----do	H-5257C2S1	5, 833
Green, Harold D	Undergraduate, clinical	H-0344C11	25, 000
Green, Harold D	Multidepartmental, clinical-preclinical	H-5392C2	107, 020
Institution total, 4 grants, $144,853			
STATE TOTAL, 19 grants			450, 158
NORTH DAKOTA			
GRAND FORKS			
North Dakota, University of			
Ederstrom, H. E	Undergraduate, clinical	H-5024C8	14, 985
Institution total, 1 grant, $14,985			
STATE TOTAL, 1 grant			14, 985

Program Director	General Area of Training	Grant No.	Amount
OHIO			
CINCINNATI			
Children's Hospital			
Kaplan, Samuel	Pediatric cardiology	H-5371C2	$16,740
Institution total, 1 grant, $16,740			
Cincinnati, University of			
Acheson, George H	Pharmacology	H-5280C2	14,700
Acheson, George H	----do	H-5280C2S1	9,828
Fowler, Noble O	Multidepartmental, clinical-preclinical	H-5445C1	37,422
McGuire, Johnson	Undergraduate, clinical	H-0244C11	25,000
Institution total, 4 grants, $86,950.			
CLEVELAND			
Frank E. Bunts Educational Institute			
Leedham, Charles L	Multidepartmental, clinical	H-5162C3S1	2,160
Leedham, Charles L	----do	H-5162C4	30,000
Page, Irvine H	Biochemistry	H-5126C4	24,500
Page, Irvine H	----do	H-5126C4S1	20,417
Institution total, 4 grants, $77,077.			
Western Reserve University			
Pritchard, Walter H	Undergraduate, clinical	H-5052C8	24,975
Sayers, George	Multidepartmental, clinical	H-5230C2	29,500
Sutherland, E. W., Jr	Pharmacology	H-5228C3	39,000
Sutherland, E. W., Jr	----do	H-5228C3S1	12,852
Institution total, 4 grants, $106,327.			
COLUMBUS			
Ohio State University			
Ogden, Eric	Undergraduate, clinical	H-5035C7	25,000
Warren, James V	Medical cardiology	H-5546	53,000
Warren, James V	----do	H-5546S1	16,337
Institution total, 3 grants, $94,337.			
STATE TOTAL, 16 grants			381,431

Program Director	General Area of Training	Grant No.	Amount
OKLAHOMA			
OKLAHOMA CITY			
Oklahoma Medical Research Institute			
Furman, Robert H	Medical cardiology	H-5403C1	$21,276
Furman, Robert H	do	H-5403C1S1	17,982
Furman, Robert H	do	H-5403C1S2	32,715
Institution total, 3 grants, $71,973.			
Oklahoma, University of			
Bayley, Robert H	Multidepartmental, clinical-preclinical	H-5406C2	22,398
Jaques, William E	Pathology	H-5338C1	29,997
Jaques, William E	do	H-5338C1S1	18,360
Keyl, M. J	Summer technology	H-5341C2	23,164
Mosley, Kirk T	Public health	H-5181C3	29,592
Wolf, Stewart	Undergraduate, clinical	H-0273C11	25,000
Wolf, Stewart	Symposium	H-5106C5	2,000
Wolf, Stewart	Psychosomatic	H-5351C1S1	5,940
Wolf, Stewart	do	H-5351C2	54,729
Institution total, 9 grants, $211,180.			
STATE TOTAL, 12 grants			283,153
OREGON			
PORTLAND			
Medical Research Foundation of Oregon, Inc.			
Metcalfe, James	Medical cardiology	H-5499	40,111
Institution total, 1 grant, $40,111.			
Oregon, University of, Medical School			
Griswold, Herbert E	Undergraduate, clinical	H-5005C11	25,000
Institution total, 1 grant, $25,000			
STATE TOTAL, 2 grants			65,111

Program Director	General Area of Training	Grant No.	Amount
PENNSYLVANIA			
PHILADELPHIA			
Hahnemann Medical College and Hospital			
Likoff, William	Undergraduate, clinical	H-0288C11	$25,000
Institution total, 1 grant, $25,000			
Jefferson Medical College of Philadelphia			
Gibbon, John H., Jr	Surgical cardiology research	H-5339C2	23,000
Sodeman, William A	Undergraduate, clinical	H-0287C11	25,000
Institution total, 2 grants, $48,000			
Pennsylvania, University of			
Dripps, Robert D	Anesthesiology	H-5183C3	8,775
Forster, Robert E	Pulmonary	H-5430C2	28,544
Forster, Robert E	do	H-5430C2S1	554
Kay, Calvin F	Medical cardiology	H-5239C2	28,728
Kay, Calvin F	do	H-5239C2S1	23,940
Sayen, John J	Undergraduate, clinical	H-0253C11	25,000
Institution total, 6 grants, $115,541			
Philadelphia College of Osteopathy			
Daiber, William F	Undergraduate, clinical	H-5036C8	25,000
Institution total, 1 grant, $25,000			
Philadelphia General Hospital			
Bellet, Samuel	Medical cardiology	H-5165C3S1	5,832
Bellet, Samuel	do	H-5165C4	35,000
Institution total, 2 grants, $40,832			
Presbyterian Hospital			
Dow, James W	Medical electronics	H-5417C1	52,585
Dow, James W	do	H-5417C1S1	43,821
Institution total, 2 grants, $96,406			
Temple University			
Oppenheimer, M. J	Undergraduate, clinical	H-5041C8	24,948
Sevy, Roger W	Multidepartmental, clinical-preclinical	H-5362C2	44,000
Institution total, 2 grants, $68,948			

Program Director	General Area of Training	Grant No.	Amount
PENNSYLVANIA—Continued			
PHILADELPHIA—Continued			
Women's Medical College of Pennsylvania			
Leaman, W. G., Jr	Undergraduate, clinical	H-0249C11	$25,000
Institution total, 1 grant, $25,000			
PITTSBURGH			
Pittsburgh, University of			
Eaton, Joseph W	Social workers	H-5444C1	15,876
Hammon, William M	Undergraduate—chronic disease	H-5087C6	15,000
Lansing, Albert I	Anatomy	H-5151C4	32,356
Lansing, Albert I	----do	H-5151C4S1	5,910
Lansing, Albert I	----do	H-5151C4S2	95,813
Myers, Jack D	Undergraduate, clinical	H-5034C8	25,000
Olson, Robert E	Nutrition	H-5276C2	60,480
Olson, Robert E	----do	H-5276C2S1	39,835
Olson, Robert E	----do	H-5276C2S2	73,463
Shapiro, Alvin P	Clinical therapeutics	H-5467S1	43,200
Shapiro, Alvin P	----do	H-5467C1	46,116
Institution total, 11 grants, $453,049			
STATE TOTAL, 28 grants			897,776
RHODE ISLAND			
PROVIDENCE			
Rhode Island Hospital			
McCusker, Henry	Developmental training	H-5480	32,400
Institution total, 1 grant, $32,400			
STATE TOTAL, 1 grant			32,400

Program Director	General Area of Training	Grant No.	Amount
SOUTH CAROLINA			
CHARLESTON			
South Carolina Medical College			
Boone, John A	Undergraduate, clinical	H-5030C8	$25,000
Cuttino, John T	Multidepartmental, clinical	H-5337C2	28,000
Knisely, Melvin H	Physiology	H-5340C2	44,712
Walton, R. P	Pharmacology cardiovascular	H-5200C3S1	5,500
Walton, R. P	-----do	H-5200C4	22,000
Institution total, 5 grants, $125,212			
STATE TOTAL, 5 grants			125,212
SOUTH DAKOTA			
VERMILLION			
South Dakota, State University of			
Read, W. O	Undergraduate, clinical	H-0262C11	15,000
Institution total, 1 grant, $15,000			
STATE TOTAL, 1 grant			15,000
TENNESSEE			
MEMPHIS			
Tennessee, University of			
Etteldorf, James N	Pediatric cardiology	H-5285C2	38,326
Tullis, I. F	Undergraduate, clinical	H-0235C11	25,000
Zilversmit, D. B	Lipid metabolism	H-5279C2	32,535
Zilversmit, D. B	-----do	H-5279C2S1	10,800
Zilversmit, D. B	-----do	H-5279C2S2	5,400
Institution total, 5 grants, $112,061			
NASHVILLE			
Meharry Medical College			
Thomas, John	Undergraduate, clinical	H-0502C11	25,000
Institution total, 1 grant, $25,000			

Program Director	General Area of Training	Grant No.	Amount
TENNESSEE—Continued			
NASHVILLE—Continued			
Vanderbilt University			
Darby, William J	Nutrition	H–5295C2	$43, 500
Darby, William J	do	H–5295C2S1	37, 085
Newman, Elliot V	Undergraduate, clinical	H–5025C8	25, 000
Institution total, 3 grants, $105,585			
STATE TOTAL, 9 grants			242, 646
TEXAS			
DALLAS			
Texas, University of			
Chapman, Carleton B	Medical cardiology research	H–5396C1	26, 676
Chapman, Carleton B	do	H–5396C1S1	17, 496
Chapman, Carleton B	do	H–5396C1S2	40, 491
Seldin, Donald W	Undergraduate, clinical	H–0293C11	25, 000
Seldin, Donald W	Biochemistry	H–5469C1	53, 610
Institution total, 5 grants, $163,273			
GALVESTON			
Texas, University of			
Leonard, James J	Undergraduate, clinical	H–5098C6	25, 000
Warren, James V	Medical cardiology	H–5314C1S1	28, 000
Institution total, 2 grants, $53,000			
HOUSTON			
Baylor University			
Alexander, James K	Medical cardiology	H–5345C2	13, 716
De Bakey, Michael E	Surgical cardiology	H–5187C3	11, 400
De Bakey, Michael E	do	H–5387C2	63, 095
De Bakey, Michael E	do	H–5187C3S1	8, 532
Dennis, Edward W	Undergraduate, clinical	H–5060C7	24, 840
Hoff, Hebbel E	Summer technology	H–5125C4	45, 684
Hoff, Hebbel E	do	H–5125C4S2	34, 263
Institution total, 7 grants, $201,530			

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Program Director	General Area of Training	Grant No.	Amount
TEXAS—Continued			
SAN ANTONIO			
Robert B. Green Memorial Hospital			
Morgan, Beverly	Developmental training	H–5539	$9, 250
Morgan, Beverly	Medical cardiology	H–5283C2	9, 250
Institution total, 2 grants, $18,500			
STATE TOTAL, 16 grants			436, 303
UTAH			
SALT LAKE CITY			
Utah, University of			
Burdette, Walter J	Genetics	H–5395C2	10, 800
Hecht, Hans H	Undergraduate, clinical	H–0250C11	25, 000
Hecht, Hans H	Medical cardiology	H–5150C4	46, 775
Hecht, Hans H	do	H–5150C4S1	6, 480
Hecht, Hans H	do	H–5150C4S2	44, 380
Institution total, 5 grants, $133,435			
STATE TOTAL, 5 grants			133, 435
VERMONT			
BURLINGTON			
Vermont, University of			
Amidon, Ellsworth L	Undergraduate, clinical	H–5053C7	25, 000
Tabakin, Burton S	Medical cardiology	H–5286C2	10, 800
Tabakin, Burton S	do	H–5286C1S1	1, 272
Institution total, 3 grants, $37,072			
STATE TOTAL, 3 grants			37, 072
VIRGINIA			
CHARLOTTESVILLE			
Virginia, University of			
Crispell, Kenneth R	Clinical therapeutics	H–5544	43, 740
Muller, W. H., Jr	Surgical cardiology	H–5418C1	29, 617
Muller, W. H., Jr	do	H–5418C1S1	21, 509
Wood, J. E., Jr	Undergraduate, clinical	H–5011C8	24, 948
Institution total, 4 grants, $119,814			

Program Director	General Area of Training	Grant No.	Amount
VIRGINIA—Continued			
RICHMOND			
Virginia, Medical College of			
Porter, Reno R	Undergraduate, clinical	H–0292C11	$25,000
Institution total, 1 grant, $25,000			
STATE TOTAL, 5 grants			144,814
WASHINGTON			
SEATTLE			
Washington, University of			
Bruce, Robert A	Undergraduate, clinical	H–5022C8	25,000
Bruce, Robert A	Multidepartmental, clinical-preclinical	H–5281C2	28,080
Merendino, K. A	Surgical cardiology	H–5194C3	13,000
Merendino K. A	do	H–5194C3S1	10,833
Rushmer, Robert F	Physiology, cardiovascular	H–5147C3S3	6,075
Rushmer, Robert F	do	H–5147C3S2	42,860
Rushmer, Robert F	do	H–5147C4	75,785
Young, Allan C	Biophysics	H–5204C3	25,000
Young, Allan C	do	H–5204C3S1	330
Young, Allan C	do	H–5204C4	25,000
Institution total, 10 grants, $251,963			
STATE TOTAL, 10 grants			251,963
WEST VIRGINIA			
MORGANTOWN			
West Virginia University			
Flink, Edmund B	Undergraduate, clinical	H–5023C8	25,000
Institution total, 1 grant, $25,000			
STATE TOTAL, 1 grant			25,000

Program Director	General Area of Training	Grant No.	Amount
WISCONSIN			
MADISON			
Wisconsin, University of			
Crumpton, Charles W	Undergraduate, clinical	H-5038C8	$25,000
Crumpton, Charles W	Multidepartmental, clinical-preclinical	H-5364C1S2	13,924
Crumpton, Charles W	----do	H-5364C2	66,200
Murphy, Q. R	Physiology, cardiovascular	H-5375C1	25,995
Murphy, Q. R	----do	H-5375C1S2	23,829
Institution total, 5 grants, $154,948			
MILWAUKEE			
Marquette University School of Medicine			
Correll, Howard L	Undergraduate, clinical	H-0261C11	25,000
Smith, James J	Physiology	H-5366C1S1	3,024
Smith, James J	----do	H-5366C2	44,874
Stead, William W	Pulmonary	H-5538	27,108
Institution total, 4 grants, $100,006			
STATE TOTAL, 9 grants			254,954
WYOMING (None)			
GUAM (None)			
PUERTO RICO			
SAN JUAN			
Puerto Rico, University of			
Diaz-Rivera, R. S	Medical cardiology	H-5342C1S1	6,250
Garcia-Palmieri, M	Undergraduate, clinical	H-5043C7	25,000
Garcia-Palmieri M	Medical cardiology	H-5342C2	25,000
Royo, Renato M	Undergraduate—chronic disease	H-5188C4	15,000
Institution total, 4 grants, $71,250			
STATE TOTAL, 4 grants			71,250
VIRGIN ISLANDS (None)			

TRAINING GRANTS TOTALS AND INSTITUTION INDEX

State and institution	Number	Dollars	Page No.
United States			
ALABAMA:			
Alabama, University of	3	81, 533	123
Total	3	81, 533	
ALASKA (None)			
ARIZONA (None)			
ARKANSAS:			
Arkansas, University of	3	60, 235	123
Total	3	60, 235	
CALIFORNIA:			
California, University of	18	500, 349	123–5
Children's Hospital Society of Los Angeles	4	39, 445	124
College of Medical Evangelists	3	62, 782	123–4
College of Osteopathic Physicians and Surgeons	1	25, 000	124
Southern California, University of	1	25, 000	124
Stanford University	4	70, 080	125
Total	31	722, 656	
COLORADO:			
Colorado, University of	7	123, 580	125
Total	7	123, 580	
CONNECTICUT:			
Hartford Hospital	3	64, 960	126
Yale University	5	119, 699	126
Total	8	184, 659	
DELAWARE (None)			
DISTRICT OF COLUMBIA:			
Catholic University of America	2	100, 678	126
Children's Hospital Research Foundation	2	26, 147	126
George Washington University	5	105, 147	126

State and institution	Number	Dollars	Page No.
United States—Continued			
DISTRICT OF COLUMBIA—Continued			
Georgetown University	4	97, 770	127
Howard University	6	123, 573	127
Total	19	453, 315	
FLORIDA:			
Florida State Board of Health	1	33, 091	127
Florida, University of	2	79, 000	127
Jacksonville Hospitals Educational Program, Inc	1	65, 340	128
Miami, University of	5	183, 433	127
Total	9	360, 864	
GEORGIA:			
Emory University	4	269, 697	128
Georgia, Medical College of	5	162, 100	128
Grady Memorial Hospital	2	72, 939	128
Total	11	504, 736	
HAWAII (None)			
IDAHO (None)			
ILLINOIS:			
Association of American Medical Colleges	1	25, 000	130
Chicago College of Osteopathy	1	25, 000	129
Chicago Medical School	3	73, 750	129
Chicago, University of	3	88, 800	129
Children's Memorial Hospital	1	7, 560	129
Illinois, University of	4	81, 700	129
Loyola University	1	25, 000	129
Michael Reese Hospital and Medical Center	2	45, 306	129
Northwestern University	5	107, 635	130
Total	21	479, 751	

TRAINING GRANTS TOTALS AND INSTITUTION INDEX—Continued

State and institution	Number	Dollars	Page No.
United States—Continued			
INDIANA:			
Indiana University Foundation Research Division	6	210, 577	130
Purdue University	1	9, 720	130
Total	7	220, 297	
IOWA:			
College of Osteopathic Medicine and Surgery	1	25, 000	131
Iowa State, University of	3	76, 339	131
Total	4	101, 339	
KANSAS:			
Kansas Medical Center, University of	1	24, 997	131
Total	1	24, 997	
KENTUCKY:			
Kentucky, University of	1	24, 948	131
Louisville, University of	1	25, 000	131
Total	2	49, 948	
LOUISIANA:			
Louisiana State University	4	77, 498	132
Tulane University	9	292, 423	132
Total	13	369, 921	
MAINE:			
Maine Medical Center	2	61, 932	132
Total	2	61, 932	
MARYLAND:			
Johns Hopkins University	13	384, 494	132
Maryland, University of	3	75, 760	133

State and institution	Number	Dollars	Page No.
United States—Continued			
MARYLAND—Continued			
Sinai Hospital of Baltimore, Inc	2	32, 832	133
Total	18	493, 086	
MASSACHUSETTS:			
Beth Israel Hospital	3	107, 839	133
Boston University	6	242, 627	134
Children's Hospital Medical Center	3	103, 100	134
Harvard University	13	231, 416	135
Marine Biological Laboratory	1	21, 654	135
Massachusetts General Hospitals	5	98, 893	134
New England Medical Center	4	117, 504	134
Peter Bent Brigham Hospital	2	57, 094	134
Simmons College	2	39, 130	134
St. Elizabeth's Hospital	1	15, 984	135
St. Vincent Hospital	1	16, 350	135
Tufts University	1	25, 000	135
Total	42	1, 076, 591	
MICHIGAN:			
Blodgett Memorial Hospital	1	21, 600	136
Michigan, University of	4	70, 557	136
Wayne State University	2	67, 000	136
Total	7	159, 157	
MINNESOTA:			
Minneapolis General Hospital	1	18, 684	136
Minnesota, University of	12	685, 389	136
Total	13	704, 073	
MISSISSIPPI:			
Mississippi, University of	4	75, 092	137
Total	4	75, 092	

TRAINING GRANTS TOTALS AND INSTITUTION INDEX—Continued

State and institution	Number	Dollars	Page No.
United States—Continued			
MISSOURI:			
Kansas City College of Osteopathy and Surgery	1	25,000	137
Kirksville College of Osteopathy and Surgery	1	25,000	137
Missouri, University of	2	50,056	137
St. Louis University	3	48,888	138
Washington University	3	149,848	138
Total	10	298,792	
MONTANA (None)			
NEBRASKA:			
Creighton University	2	44,738	138
Nebraska, University of	3	66,408	138
Total	5	111,146	
NEVADA (None)			
NEW HAMPSHIRE:			
Dartmouth College	5	109,458	139
Total	5	109,458	
NEW JERSEY:			
Seton Hall College of Medicine and Dentistry	1	25,000	139
St. Michael's Hospital	2	48,492	139
Total	3	73,492	
NEW MEXICO (None)			
NEW YORK:			
Buffalo, University of	3	44,888	140
Columbia University	8	228,289	140
Cornell University	5	154,546	141
Institute for Advancement of Medical Communication	3	97,709	141
Lenox Hill Hospital	1	21,000	141
Montefiore Hospital	2	14,667	140
United States—Continued			
NEW YORK—Continued			
Mount Sinai Hospital	3	58,692	141
New York Medical College	1	24,624	141
New York University	3	93,925	141
Research Foundation of State University of New York	9	249,788	139
Union University, Albany Medical College	5	120,859	140
Yeshiva University	11	319,581	142
Total	55	1,453,568	
NORTH CAROLINA:			
Duke University	12	254,949	143
North Carolina, University of	3	50,356	142
Wake Forest College	4	144,853	143
Total	19	450,158	
NORTH DAKOTA:			
North Dakota, University of	1	14,985	143
Total	1	14,985	
OHIO:			
Children's Hospital	1	16,740	144
Cincinnati, University of	4	86,950	144
Frank E. Bunts Educational Institute	4	77,077	144
Ohio State University	3	94,337	144
Western Reserve University	4	106,327	144
Total	16	381,431	
OKLAHOMA:			
Oklahoma Medical Research Institute	3	71,973	145
Oklahoma, University of	9	211,180	145
Total	12	283,153	

TRAINING GRANTS TOTALS AND INSTITUTION INDEX—Continued

State and institution	Number	Dollars	Page No.
United States—Continued			
OREGON:			
Medical Research Foundation of Oregon, Inc	1	40, 111	145
Oregon Medical School, University of	1	25, 000	145
Total	2	65, 111	
PENNSYLVANIA:			
Hahnemann Medical College and Hospital	1	25, 000	146
Jefferson Medical College of Philadelphia	2	48, 000	146
Pennsylvania, University of	6	115, 541	146
Philadelphia College of Osteopathy	1	25, 000	146
Philadelphia General Hospital	2	40, 832	146
Pittsburgh, University of	11	453, 049	147
Presbyterian Hospital	2	96, 406	146
Temple University	2	68, 948	146
Woman's Medical College of Pennsylvania	1	25, 000	147
Total	28	897, 776	
RHODE ISLAND:			
Rhode Island Hospital	1	32, 400	147
Total	1	32, 400	
SOUTH CAROLINA:			
South Carolina Medical College	5	125, 212	148
Total	5	125, 212	
SOUTH DAKOTA:			
South Dakota, State University of	1	15, 000	148
Total	1	15, 000	
TENNESSEE:			
Meharry Medical College	1	25, 000	148
Tennessee, University of	5	112, 061	148

State and institution	Number	Dollars	Page No.
United States—Continued			
TENNESSEE—Continued			
Vanderbilt University	3	105, 585	149
Total	9	242, 646	
TEXAS:			
Baylor University	7	201, 530	149
Robert B. Green Memorial Hospital	2	18, 500	150
Texas, University of	7	216, 273	149
Total	16	436, 303	
UTAH:			
Utah, University of	5	133, 435	150
Total	5	133, 435	
VERMONT:			
Vermont, University of	3	37, 072	150
Total	3	37, 072	
VIRGINIA:			
Virginia, Medical College of	1	25, 000	151
Virginia, University of	4	119, 814	150
Total	5	144, 814	
WASHINGTON:			
Washington, University of	10	251, 963	151
Total	10	251, 963	
WEST VIRGINIA			
West Virginia University	1	25, 000	151
Total	1	25, 000	

TRAINING GRANTS TOTALS AND INSTITUTION INDEX—Continued

State and institution	Number	Dollars	Page No.
United States—Continued			
WISCONSIN:			
Marquette University School of Medicine	4	100,006	152
Wisconsin, University of	5	154,948	152
Total	9	254,954	
WYOMING (None)			
United States total	446	12,145,631	
Territories			
GUAM (None)			
PUERTO RICO:			
Puerto Rico, Universty of	4	71,250	152
Total	4	71,250	
VIRGIN ISLANDS (None)			
Territories total	4	71,250	
GRAND TOTAL	450	12,216,881	

fellowship awards

AWARDS TO PROVIDE SELECTED INVESTIGATORS WITH SPECIAL RESEARCH OPPORTUNITIES

ARRANGEMENT OF MATERIAL AND GRANT NUMBER KEY—TABLE THREE

Material in this table is arranged alphabetically under three main divisions: (1) States, (2) Territories, and (3) Foreign Countries.

Under the above three main divisions, the material is arranged alphabetically by *city*, then alphabetically by *institution*.

Under each institution, material is arranged alphabetically by the name of the Fellow.

Following the primary *grant number*, letters and numerals indicate further detail concerning the grant. The letters have denotive meanings as follows: C = Continuation Grant and R = Revised Application. When a numeral follows any such suffix letter it indicates the ordinal number of the action. Thus C3 means third *continuation* year and R2 means second *revision*.

Fellow	Type	Field	Grant No.	Amount
ALABAMA				
BIRMINGHAM				
Alabama, University of				
Ennis, Arthur L	Postdoctoral	Medicine	H–13647	$7, 000
Sheffield, Lowell T	----do	Physiology	H–9775C1	6, 097
Institution total, 2 awards, $13,097				
STATE TOTAL, 2 awards				13, 097
ALASKA (None)				
ARIZONA (None)				
ARKANSAS (None)				
CALIFORNIA				
BERKELEY				
California, University of				
Andersen, Richard N	Postdoctoral	Biochemistry	H–11005R1	5, 657
Carpe, Lestra M	----do	Medicine	H–10291C1	2, 750
Lis, Elaine W	----do	Nutrition	H–11288C1	6, 000
Mel, Howard C	Special Fellow	Biophysics	H–4941C6	6, 280
Nelson, Gary J	Postdoctoral	Biology	H–10964C1	5, 500
Watson, Keene A	----do	Biostatistics	H–10221C1	8, 287
Institution total, 6 awards, $34,474				
DAVIS				
California, University of				
Battaile, Julian	Postdoctoral	Agricultural biochemistry	H–8961C2	6, 000
Institution total, 1 award, $6,000				
DUARTE				
City of Hope Medical Center				
O'Brien, John S	Postdoctoral	Biochemistry	H–12662	6, 904
Institution total, 1 award, $6,904				

Fellow	Type	Field	Grant No.	Amount
CALIFORNIA—Continued				
LA JOLLA				
Scripps Clinic and Research Foundation				
Fanestil, Darrell D	Postdoctoral	Biochemistry	H-14078	$7,000
Longmore, William J	do	do	H-11113R2	6,130
Institution total, 2 awards, $13,130				
LOS ANGELES				
California, University of				
Baskin, Ronald J	Postdoctoral	Biophysics	H-11803	5,000
Dart, Sidney L	Special Fellow	do	H-12285	7,000
Fagan, Leonard F	Postdoctoral	Pediatrics	H-12178C1	5,983
Institution total, 3 awards, $17,983				
College of Medical Evangelists				
Cain, Harvey D	Postdoctoral	Physiology	H-12681	7,500
Frasher, Wallace G	Special Fellow	do	H-13168	10,000
Sobin, Sidney S	do	Medicine	H-7064C4	14,800
Institution total, 3 awards, $32,300				
Mount Sinai Hospital				
Shkolnik, Selwyn	Postdoctoral	Medicine	H-13774	7,094
Institution total, 1 award, $7,094				
Southern California, University of				
Gieschen, Victor W	Postdoctoral	Medicine	H-13930	7,000
Hollander, Philip B	do	Pharmacology	H-11929	6,500
Paradise, Raymond R	do	do	H-12112	6,148
Rothschild, Philip	do	Surgery	H-12084	5,000
Tsuji, Harold K	do	do	H-8374C1	6,227
Institution total, 5 awards, $30,875				
Veterans' Administration Center				
Lewis, Norman	Postdoctoral	Physiology	H-11133C1	5,500
Institution total, 1 award, $5,500				
SAN FRANISCO				
California, University of				
Bezman, Alyce L	Postdoctoral	Cardiology	H-10492C1	5,500
Bristow, John D	Special Fellow	Physiology	H-13456	11,054
Cuthbertson, E. M	Postdoctoral	do	H-10354C1	5,500
Felts, James M	Special Fellow	Medicine	H-13169	9,400

Fellow	Type	Field	Grant No.	Amount
CALIFORNIA—Continued				
SAN FRANCISCO—Continued				
California, University of—Continued				
Ferguson, Richard E	Postdoctoral	Physiology	H–14505	$6,000
Howenstine, James A	do	do	H–12386	5,754
Kane, John P	do	Medicine	H–11586	7,000
Petersen, Martin J	do	do	H–11435C1	7,000
Price, Henry L	Special Fellow	Anesthesiology research	H–3907R1	5,234
Storey, Winnifred F	Postdoctoral	Physiology	H–10484C1	5,500
Young, Roscoe C., Jr	do	Pulmonary research	H–11375C1	7,000
Zanger, Louis C	do	Medicine	H–13246	5,500
Institution total, 12 awards, $80,442				
PASADENA				
California Institute of Technology				
Jones, Richard T	Postdoctoral	Chemistry	H–10306C1	8,775
Institution total, 1 award, $8,775				
Children's Hospital				
O'Reilly, Robert A	Postdoctoral	Hematology	H–13167	7,500
Institution total, 1 award, $7,500				
Institute of Medical Sciences				
Popper, Robert W	Special Fellow	Cardiology	H–12923	6,500
Institution total, 1 award, $6,500				
Presbyterian Medical Center				
Pinto, Douglas W	Postdoctoral	Medicine	H–13547	7,500
Institution total, 1 award, $7,500				
STANFORD				
Stanford University				
Boyd, Robert J	Postdoctoral	Surgery	H–12814	6,500
Calvin, James W	do	do	H–13078	5,500
Dong, Eugene, Jr	do	do	H–12515	5,743
Dong, Eugene Jr	do	do	H–12515C1	6,500
Hurley, Edward J	do	do	H–12192	6,000
Hurley, Edward J	do	do	H–12192C1	6,000
Lower, Richard R	do	do	H–10272C1	7,500
Institution total, 7 awards, $43,743				
STATE TOTAL, 46 awards				308,720

Fellow	Type	Field	Grant No.	Amount
COLORADO				
DENVER				
Colorado, University of				
Averill, Keith H	Postdoctoral	Internal medicine	H-14796	$7,100
Vogel, John K	----do	Cardiology	H-13317	6,978
Institution total, 2 awards, $14,078				
FORT COLLINS				
Colorado State University				
Murphy, Clifton N	Postdoctoral	Veterinary medicine	H-13206	7,081
Institution total, 1 award, $7,081				
STATE TOTAL, 3 awards				21,159
CONNECTICUT				
NEW HAVEN				
Yale University				
Brenneman, Faith N	Postdoctoral	Biochemistry	H-5458C4	5,500
Goodman, Alvin I	----do	Medicine	H-11056C1	7,000
Kessler, William	----do	Pathology	H-12074	7,000
Willenkin, Robert L	----do	Physiology	H-12969	5,500
Institution total, 4 awards, $25,000				
STATE TOTAL, 4 awards				25,000
DELAWARE (None)				
DISTRICT OF COLUMBIA				
WASHINGTON, D.C.				
George Washington University				
Kaufman, Richard M	Postdoctoral	Medicine	H-13717	7,000
Kirby, James C., Jr	----do	Hematology	H-11684	7,000
Institution total, 2 awards, $14,000				
Georgetown University				
Calvin, James L	Special Fellow	Cardiology	H-13768	15,023
Gillespie, John F	----do	Surgery	H-12806	12,000

Fellow	Type	Field	Grant No.	Amount
DISTRICT OF COLUMBIA—Continued				
WASHINGTON, D.C.—Continued				
Georgetown University—Continued				
Gilmore, Bruce L.	Postdoctoral	Medicine	H–13413	$6,000
Hajjar, George C.	----do	Physiology	H–13011	7,000
Liptak, Thomas E.	----do	Medicine	H–12392	7,000
Perloff, Joseph K.	Special Grant	----do	H–14009	19,176
Vadney, Richard C.	Postdoctoral	----do	H–10731C1	7,500
Institution total, 7 awards, $73,699				
Walter Reed Army Medical Center				
Baco, Dapena Raul	Postdoctoral	Hematology	H–12538	5,844
Institution total, 1 award, $5,844				
STATE TOTAL, 10 awards				93,543
FLORIDA				
CORAL GABLES				
Miami, University of				
Jacobs, Warren A.	Postdoctoral	Physiology	H–13461	6,500
Nonkin, Paul M.	----do	Medicine	H–12052	6,700
Zao, Zang Z.	Special Fellow	Physiology	H–9307C2	8,404
Institution total, 3 awards, $21,604				
GAINESVILLE				
Florida, University of				
Childress, Robert C.	Postdoctoral	Internal medicine	H–11983C1	6,500
Cruze, Kenneth	Special Fellow	Surgery	H–11831C1	8,000
Fleet, Harvey M.	Postdoctoral	Medicine	H–14538	6,000
Institution total, 3 awards, $20,500				
STATE TOTAL, 6 awards				42,104
GEORGIA				
ATLANTA				
Emory University				
Manning, John W.	Postdoctoral	Physiology	H–6371C2	7,500
Mostellar, M. E.	----do	Medicine	H–11166C1	6,500
Institution total, 2 awards, $14,000				

630825 O - 62 - 12

Fellow	Type	Field	Grant No.	Amount
GEORGIA—Continued				
AUGUSTA				
Georgia, Medical College of				
Hamilton, William F	Special Fellow	Physiology	H–13277	$4,800
Institution total, 1 award, $4,800				
STATE TOTAL, 3 awards				18,800
HAWAII (None)				
IDAHO (None)				
ILLINOIS				
CHICAGO				
Chicago, University of				
Feder, Walter	Special Fellow	Medicine	H–8496C2	10,000
Ozoa, Angelo K	Postdoctoral	Physiology	H–12949	7,980
Thilenius, Otto G	do	do	H–10644C1	7,980
Institution total, 3 awards, $25,960				
Chicago, University of, Clinics				
Pickard, Sol D	Postdoctoral	Medicine	H–11388C1	7,000
Institution total, 1 award, $7,000				
Cook County Children's Hospital				
Castillo, Hector M	Postdoctoral	Pediatrics	H–12481	7,000
Institution total, 1 award, $7,000				
Illinois, University of				
Blazek, William V	Postdoctoral	Internal medicine	H–11336C1	6,500
Institution total, 1 award, $6,500				
Northwestern University				
Gabler, Walter L	Postdoctoral	Biochemistry	H–12422	7,529
Johnson, Eloise E	Special Fellow	Medicine	H–10467C1	7,000
Linn, Harold	Postdoctoral	Cardiovascular training	H–14142	6,000
Institution total, 3 awards, $20,529				
STATE TOTAL, 9 awards				66,989

Fellow	Type	Field	Grant No.	Amount
INDIANA				
BLOOMINGTON				
Indiana University Foundation Research Division				
Banaszak, Leonard J	Postdoctoral	Biochemistry	H–14357	$5,515
Mandelbaum, Isidore	do	Surgery	H–13177	7,500
Vidaver, George A	do	Biochemistry	H–7683R2	5,500
Institution total, 3 awards, $18,515				
STATE TOTAL, 3 awards				18,515
IOWA				
AMES				
Iowa State University of Science and Technology				
Cholvin, Neal R	Postdoctoral	Physiology	H–11700C1	6,832
Institution total, 1 award, $6,832				
STATE TOTAL, 1 award				6,832
KANSAS (None)				
KENTUCKY				
LEXINGTON				
Kentucky, University of				
Morris, Allan J	Postdoctoral	Biochemistry	H–5872C2	6,000
Institution total, 1 award, $6,000				
STATE TOTAL, 1 award				6,000
LOUISIANA				
NEW ORLEANS				
Tulane University				
Chapman, William L	Postdoctoral	Medicine	H–11974	5,500
Lazzara, Ralph	do	do	H–13354	6,000

Fellow	Type	Field	Grant No.	Amount
LOUISIANA—Continued				
NEW ORLEANS—Continued				
Tulane University—Continued				
O'Meallie, L. P	Postdoctoral	Internal medicine	H–13063	$5, 500
Pearl, Maurice A	do	Medicine	H–9568C1	6, 500
Institution total, 4 awards, $23,500				
STATE TOTAL, 4 awards				23, 500
MAINE				
PORTLAND				
Maine Medical Center				
Austin, William H	Postdoctoral	Medicine	H–12093	6, 526
Rand, Peter W	do	do	H–12045R1	6, 000
Institution total, 2 awards, $12,526				
STATE TOTAL, 2 awards				12, 526
MARYLAND				
BALTIMORE				
Johns Hopkins University				
Deitrick, Richard A	Postdoctoral	Biochemistry	H–10475C1	6, 500
Dutton, Robert E., Jr	do	Medicine	H–10659C1	6, 000
Freisinger, G. C	do	do	H–11230C1	8, 000
Lee, Ting D., Jr	do	do	H–11361C1	6, 000
Levitsky, John M	Special Fellow	do	H–10547C1	4, 667
Mehrizi, Ali	Postdoctoral	Pediatrics	H–12733	8, 000
Russell, Roy P	do	Medicine	H–10582C1	7, 000
Sipple, John H., Jr	do	do	H–13618	7, 529
Wheeler, James T	do	do	H–10868C1	5, 500
Institution total, 9 awards, $59,196				
Maryland, University of				
Antlitz, Albert M	Postdoctoral	Internal medicine	H–12320C1	8, 000
Blair, Emil	Senior Fellow	Surgery	H–4322	21, 060
Greisman, Sheldon E	do	Medicine and physiology	H–15237R1	17, 463
Spicer, William S	Special Fellow	Medicine	H–10186C2	10, 095
Institution total, 4 awards, $56,618				

Fellow	Type	Field	Grant No.	Amount
MARYLAND—Continued				
BETHESDA				
National Institutes of Health				
De Freitas, F. M	Special Fellow	Hemodynamics	H-179	$6, 862
Frahm, Charles J	Postdoctoral	Cardiology	H-10412C1	3, 967
Gaston, Lamont W	Special Fellow	Biochemistry	H-8661R1	7, 611
Hellman, Dorothea W	Postdoctoral	Endocrinology	H-13212	5, 500
Michaelson, I. A	do	Biology	H-10812C1	2, 317
Rabinowitz, L	do	Physiology	H-10070C1	5, 729
Reporter, Minocher	do	Boichemistry	H-12451	6, 627
Rose, Herbert G	do	do	H-11310C1	7, 000
Tidball, M. E	do	Pharmacology	H-10982C1	5, 126
Wagner, Conrad	do	Biochemistry	H-9679C1	7, 108
Watson, John F	Special Fellow	Medicine	H-13183	7, 537
Institution total, 11 awards, $65,384				
STATE TOTAL, 24 awards				181, 198
MASSACHUSETTS				
BOSTON				
Boston University				
Miller, Ronald B	Postdoctoral	Physiology	H-12195	6, 500
Institution total, 1 award, $6,500				
Massachusetts General Hospital				
Lees, Robert S	Postdoctoral	Medicine	H-13142	3, 667
Litwin, S. B	do	Surgery	H-11922C1	6, 500
Institution total, 2 awards, $10,167				
Massachusetts Memorial Hospitals				
Goodman, Allen D	Postdoctoral	Physiology	H-14635	7, 000
Hollander, William	Special Fellow	Medicine	H-3940C6	11, 000
Institution total, 2 awards, $18,000				
Peter Bent Brigham Hospital				
Woerner, Thomas E	Postdoctoral	Medicine	H-11868C1	7, 000
Institution total, 1 award, $7,000				

Fellow	Type	Field	Grant No.	Amount
MASSACHUSETTS—Continued				
BOSTON—Continued				
Tufts University				
Matloff, Jack M	Postdoctoral	Surgery	H-13481	$6,500
Institution total, 1 award, $6,500				
CAMBRIDGE				
Harvard University				
Alexander, Sidney	Postdoctoral	Physiology	H-10351C1	6,000
Baker, George P., Jr	do	Medicine	H-9484C1	7,000
Borgese, Thomas A	do	do	H-10995C1	6,000
Brande, Paul F	do	Physiology	H-6966C3	2,750
Briehl, Robin W	Special Fellow	do	H-7066C4	6,518
Burns, Robert O	do	do	H-11634	9,691
Crout, John	do	Pharmacology	H-14592	8,018
Gabuzda, Thomas G	Postdoctoral	Medicine	H-9250C1	7,000
George, Jack M	do	Physiology	H-11519R1	5,000
Hammer, Earle I	do	Internal medicine	H-11476C1	5,500
Henderson, Lee W	do	Medicine	H-13458	7,524
Hollenberg, Milton	do	do	H-13780	5,754
Hugenholtz, Paul G	Special Fellow	Cardiology	H-8886C2	7,500
Hyland, John W	Postdoctoral	Medicine	H-9677C2	6,500
Jacob, Harry S	do	do	H-11305C1	7,500
Jacobey, John A	do	Surgery	H-12303	5,500
Kaplan, Manuel E	do	Internal medicine	H-9721C2	7,500
Koch-Wester, Jan	do	Pharmacology	H-11215C1	5,500
Krasnow, Norman	do	Medicine	H-11242C1	7,000
Lederman, Melvin	do	Surgery	H-9298C2	5,500
Lee, James B	do	Metabolism	H-9722C2	5,500
Lennarz, William J	do	Chemistry	H-7547C1R1	6,000
Morse, Robert L	do	Medicine	H-12309	6,550
Norman, Joe R	do	do	H-12272	6,000
Peterson, John E	Special Fellow	do	H-12754	7,940
Strang, Ruth C	Postdoctoral	Physiology	H-13121	5,500
Welzant, Walter R	do	Medicine	H-9584C1	5,500
Yurchak, Peter M	do	do	H-13447	6,018
Zalusky, Ralph	do	Internal medicine	H-10135C1	6,500
Institution total, 29 awards, $184,763				

Fellow	Type	Field	Grant No.	Amount
MASSACHUSETTS—Continued				
CAMBRIDGE—Continued				
Massachusetts Institute of Technology				
Baughman, Dwight J	Postdoctoral	Biology	H-7262C1	$9, 450
Dickson, James F	Special Fellow	Multidisciplinary	H-14296	14, 274
Shapiro, Sandor S	do	Biology	H-13942	9, 000
Institution total, 3 awards, $32,724				
STATE TOTAL, 39 awards				265, 654
MICHIGAN				
ANN ARBOR				
Michigan, University of				
Gholson, Robert K	Postdoctoral	Biochemistry	H-9252C1	7, 500
Greene, James A. Jr	do	Physiology	H-13763	8, 000
Zweifllr, Andrew J	do	Internal medicine	H-12234C1	8, 500
Institution total, 3 awards, $24,000				
DETROIT				
Wayne State University				
Hayden, Ralph O	Postdoctoral	Cardiology	H-13543	6, 000
Stock, Thomas B	do	do	H-13578	7, 500
Wendt, Vernon E	do	Medicine	H-12201	8, 000
Institution total, 3 awards, $21,500				
STATE TOTAL, 6 awards				45, 500
MINNESOTA				
MINNEAPOLIS				
Minnesota, University of				
Absolon, Karel B	Special Fellow	Surgery	H-12474	6, 852
Bernstein, Eugene F	Postdoctoral	do	H-9619C2	7, 864
Caster, William O	Special Fellow	Physiological chemistry	H-7196C4	9, 174
Gans, Henry	Postdoctoral	Surgery	H-12291	6, 352
Goldfarb, Ben L	do	Internal medicine	H-14129	6, 477
Goott, Bernard	do	Surgery	H-12338	6, 350
Lade, Roswith I	do	Pediatrics	H-12253C1	5, 860

Fellow	Type	Field	Grant No.	Amount
MINNESOTA—Continued				
MINNEAPOLIS—Continued				
Minnesota, University of—Continued				
Long, David M., Jr	Special Fellow	Surgery	H–7388R1	$7, 930
Longerbeam, Jerrold	do	do	H–13795	8, 864
Lowman, James T	Postdoctoral	Pediatrics	H–12250	5, 852
Michael, Alfred F	do	Pediatric ophthalmology	H–12159	7, 058
Miller, Harold D	do	Physiology	H–10449C1	7, 950
Richards, Lynn S., Jr	do	Surgery	H–9023C2	9, 300
Salmon, Peter A	do	Medicine	H–12371	7, 352
Institution total, 14 awards, $103,235				
ROCHESTER				
Mayo Clinic				
Campbell, John C	Postdoctoral	Surgery	H–12792	6, 000
Doumanian, Ara V	do	Medicine	H–13045	6, 820
Institution total, 2 awards, $12,820				
Minnesota, University of, Graduate School—Mayo Foundation for Medical Education and Research				
Amundsen, Melvin A	Postdoctoral	Physiology	H–13375	6, 500
Kottke, Bruce A	do	Biochemistry	H–10321C1	2, 917
Potter, Clarence S	do	do	H–12368	7, 000
Institution total, 3 awards, $16,417				
STATE TOTAL, 19 awards				132, 472
MISSISSIPPI				
JACKSON				
Mississippi, University of				
Arrington, Thomas H	Postdoctoral	Medicine	H–13667	8, 000
Langston, Jimmey B	do	Physiology	H–7181C5	6, 500
Lockwood, William R	do	Medicine	H–13592	6, 500
Richardson, T. Q	do	Physiology	H–7007C3	5, 500
Sekul, Antonio A	do	Pharmacology	H–10165C1	6, 500
Stone, Hubert L	do	Physiology	H–14718	5, 050
Institution total, 6 awards, $38,050				
STATE TOTAL, 6 awards				38, 050

Fellow	Type	Field	Grant No.	Amount
MISSOURI				
KIRKSVILLE				
Kirksville College of Osteopathy and Surgery				
Chace, John A	Special Fellow	Osteopathy	H-5134C6	$10,000
Institution total, 1 award, $10,000				
ST. LOUIS				
St. Louis University				
Entrup, Richard W	Postdoctoral	Medicine	H-11906	7,571
Jacques, Felix A	-----do	Medical sciences	H-11522C1	5,000
Muelheims, Gerhard	Special Fellow	Medicine	H-7355C4	8,000
Zekert, Horst	-----do	Internal medicine	H-8631C2R1	7,500
Institution total, 4 awards, $28,071				
Washington University				
Cozart, Duane E	Postdoctoral	Internal medicine	H-13809	7,500
Danforth, William H	Special Fellow	Biochemistry	H-7411R1	10,000
Fozzard, Harry A	Postdoctoral	Medicine	H-13404	7,000
Institution total, 3 awards, $24,500				
STATE TOTAL, 8 awards				62,571
MONTANA (None)				
NEBRASKA (None)				
NEVADA (None)				
NEW HAMPSHIRE				
HANOVER				
Dartmouth College				
Aronson, John F	Postdoctoral	Cytology	H-10663C1	6,500
Institution total, 1 award, $6,500				
STATE TOTAL, 1 award				6,500

Fellow	Type	Field	Grant No.	Amount
NEW JERSEY				
JERSEY CITY				
Seton Hall College of Medicine and Dentistry				
Frank, Martin J	Postdoctoral	Medicine	H–11172C1	$7,500
Lehan, Patrick H	do	do	H–12423	7,500
Troum, Lawrence	do	Internal medicine	H–14754	7,000
Institution total, 3 awards, $22,000				
NEWARK				
Saint Michael's Hospital				
Pallini, Carlo A	Postdoctoral	Medicine	H–9822C1R1	6,000
Institution total, 1 award, $6,000				
STATE TOTAL, 4 awards				28,000
NEW MEXICO (None)				
NEW YORK				
ALBANY				
Albany Medical College, Union University				
Leach, John K	Special Fellow	Physiology	H–13284	10,000
Institution total, 1 award, $10,000				
BRONX				
Bronx Hospital				
Block, Charles	Postdoctoral	Medicine	H–11927C1	7,000
Institution total, 1 award, $7,000				
BROOKLYN				
New York State University, Downstate Medical Center				
Crump, Jesse F., Jr	Postdoctoral	Medicine	H–10935C1	6,000
Hanssen, Odd E	Special Fellow	Pathology	H–146	7,671
Harshaw, David H., Jr	Postdoctoral	Philosophy	H–14131	6,008
Moore, E. N	do	Physiology	H–9623C2	6,021
Rand, Elias	do	Medicine	H–13606	6,240
Wechsler, Bernard M	do	do	H–11026C1	3,250
Institution total, 6 awards, $35,190				

Fellow	Type	Field	Grant No.	Amount
NEW YORK—Continued				
BUFFALO				
Buffalo, University of				
Reeves, Robert B	Postdoctoral	Physiology	H-6445C1	$5,530
Institution total, 1 award, $5,530				
NEW YORK CITY				
Columbia University				
Blumenstock, D. A	Postdoctoral	Surgery	H-12460	7,547
Bohrer, Norman K	do	Medicine	H-13638	6,000
Cunningham, N	do	Pediatrics	H-13656	6,000
Drucker, William D	do	Internal medicine	H-9601C2	7,000
Elkind, Arthur H	do	do	H-13542	7,000
Friedman, Irwin	do	Physiology	H-11317R1	6,250
Gabor, George E	do	Medicine	H-13711	6,500
Garcia, Alfredo M	do	Hematology	H-11790C1	5,500
Goldfischer, J. D	do	Internal medicine	H-13706	7,000
Grayzel, Joseph	do	Pediatrics	H-8557C2	5,635
Hashim, Sami A	do	Medicine	H-7556C2	6,500
Lewis, Milena L	do	Physiology	H-11921C1	6,500
Mizgala, Henry F	do	Medicine	H-13496	7,000
Morkin, Eugene	do	do	H-13639	6,000
Morris, Ralph C., Jr	do	do	H-12348	5,500
Shimomura, Seiichi	do	do	H-12695	6,500
Sullivan, Stuart	do	Physiology	H-11900	6,000
Walker, Jane H	do	Medicine	H-11228C1	5,500
Institution total, 18 awards, $113,932				
Cornell University				
Cade, James R	Postdoctoral	Medicine	H-8792C2	8,000
Clarke, Robert L	do	Surgery	H-9324C2	7,000
Ferguson, Angella D	Special Fellow	Medicine	H-12772	7,019
Gamble, Wilbert	Postdoctoral	Biochemistry	H-7997C1	5,040
Glabman, Sheldon	do	Physiology	H-11221C1	7,500
Gulotta, Stephen J	do	do	H-13554	6,500
Jenkins, David E., Jr	do	Internal Medicine	H-13597	7,000
Strickler, James C	Special Fellow	Medicine	H-13587	8,000
Westcott, Jack L	Postdoctoral	Radiology	H-12402	7,372
Institution total, 9 awards, $63,431				

Fellow	Type	Field	Grant No.	Amount
NEW YORK—Continued				
NEW YORK CITY—Continued				
Mount Sinai Hospital				
Eisner, Gilbert M	Postdoctoral	Medicine	H–12018	$5, 500
Rappaport, Howard R	do	Physiology	H–12472	5, 500
Institution total, 2 awards, $11,000				
New York Medical College				
Ceraolo, Giuseppe	Postdoctoral	Pediatrics	H–12840	5, 500
Institution total, 1 award, $5, 500				
New York University				
Aschheim, Emil	Postdoctoral	Pathology	H–12476	6, 000
Cady, Lee D., Jr	Special Fellow	Medicine and statistics	H–9263C2	9, 000
Dossetor, John B	Postdoctoral	Medicine	H–12130	7, 531
Eisenger, Robert P	do	do	H–12842	6, 500
Horn, Leif	Special Fellow	Physiology	H–10678C1	8, 500
Janoff, Aaron	Postdoctoral	do	H–6461C1	7, 000
Kaley, Gabor	do	Pathology	H–12222	5, 000
Steinmetz, Philip R	do	Physiology	H–12113	7, 009
Stutman, Leonard J	Special Fellow	Medicine	H–10815C1	9, 000
Institution total, 9 awards, $65,540				
New York University Medical Center				
Gevirtz, Norman	Postdoctoral	Hematology	H–14128	6, 500
Lewis, Elmore W., Jr	do	Medicine	H–13605	6, 500
Pearl, William	do	Physiology	H–7438C2	6, 500
Institution total, 3 awards, $19,500				
New York University School of Medicine				
Letteri, Joseph M	Postdoctoral	Medicine	H–11185C1	6, 000
Wesson, Laurence G	Senior Fellow	do	H–15447	13, 662
Institution total, 2 awards, $19,662				
Rockfeller Institute				
Bryant, James M	Special Fellow	Human genetics	H–12592	9, 000
Institution total, 1 award, $9,000				
Yeshiva University				
Golinko, Richard J	Postdoctoral	Physiology	H–9482C2	6, 500
Institution total, 1 award, $6,500				

Fellow	Type	Field	Grant No.	Amount
NEW YORK—Continued				
ROCHESTER				
Rochester, University of				
Glick, Gerald	Postdoctoral	Medicine	H–12002	5, 500
Luria, Milton N	do	do	H–8749C2	5, 500
Nye, William H	do	do	H–9305C2	6, 500
Plager, John E	do	do	H–2385C3	7, 500
Richardson, John W	do	Surgery	H–11764	7, 000
Institution total, 5 awards, $32,000				
SYRACUSE				
New York State University, Upstate Medical Center				
Epifano, Leonard D	Postdoctoral	Internal medicine	H–11823C1	7, 000
Trepacz, Edmund J	do	Medicine	H–12547	5, 500
Wilkinson, Robert S	do	do	H–11374C1	2, 606
Institution total, 3 awards, $15,106				
Syracuse University				
Alexander, F. M	Special Fellow	Nursing	H–8983C2	5, 292
Institution total, 1 award, $5,292				
STATE TOTAL, 64 awards				424, 183
NORTH CAROLINA				
CHAPEL HILL				
North Carolina, University of				
Finn, Arthur L	Postdoctoral	Internal medicine	H–11271C1	6, 500
Institution total, 1 award, $6,500				
DURHAM				
Duke University				
Harlan, William R	Postdoctoral	Biochemistry	H–14611	6, 500
Whalen, Robert E	do	Medicine	H–11258C1	7, 500
Institution total, 2 awards, $14,000				

Fellow	Type	Field	Grant No.	Amount
NORTH CAROLINA—Continued				
WINSTON-SALEM				
Wake Forest College				
Meredith, Jesse H	Special Fellow	Medicine	H–7037C3	$10,000
Institution, total 1 award, $10,000				
STATE TOTAL, 4 awards				30,500
NORTH DAKOTA (None)				
OHIO				
CINCINNATI				
Cincinnati, University of				
King, Lionel R	Postdoctoral	Medicine	H–7226C1	7,000
Institution total, 1 award, $7,000				
CLEVELAND				
Mount Sinai Hospital				
Givertz, Bernard	Postdoctoral	Internal medicine	H–12751	6,472
Institution total, 1 award, $6,472				
St. Vincent Charity Hospital				
Corcoran, Arthur C	Special Fellow	Internal medicine	H–13190	16,500
Institution total, 1 award, $16,500				
Western Reserve University				
Mallett, David L	Postdoctoral	Medicine	H–10558C1	3,250
Rasch, Cleo A	do	Pediatrics	H–8675C2	5,500
Taylor, Anna N	do	Physiology	H–6097C5	1,500
Institution total, 3 awards, $10,250				
COLUMBUS				
Ohio State University				
Hamlin, Robert L	Postdoctoral	Physiology	H–13524	6,400
Roldan, Pura N	do	do	H–10862C1	7,875
Weissler, Arnold M	Senior Fellow	Medicine	H–13971	25,987
Institution total, 3 awards, $40,262				
STATE TOTAL, 9 awards				80,484

Fellow	Type	Field	Grant No.	Amount
OKLAHOMA (None)				
OREGON				
PORTLAND				
Oregon, University of, Medical School				
Edwards, Miles J	Postdoctoral	Medicine	H–9751C1	$3, 228
Institution total, 1 award, $3,228				
STATE TOTAL, 1 award				3, 228
PENNSYLVANIA				
PHILADELPHIA				
Drexel Institute of Technology				
Higgens, Lawrence S	Special Fellow	Medical instrumentation	H–14031	7, 500
Institution total, 1 award, $7,500				
Pennsylvania, University of				
Bassett, David R	Postdoctoral	Internal medicine	H–9118C1R1	7, 500
Buchanan, James W	do	Veterinary medicine	H–13903	7, 850
Cain, Dennis F	do	Biochemistry	H–9297R1	4, 500
Cameron, Bruce F	do	do	H–11508C1	5, 745
Coburn, Ronald F	do	Physiology	H–11564C1	5, 500
Davidson, Warren D	do	Biochemistry	H–13853	6, 500
Feigl, Eric O	do	Physiology	H–10627C1	6, 000
Hyde, Richard W	do	Psychology	H–12484	7, 000
Katcher, Aaron H	Special Fellow	Medicine	H–7812C3	7, 500
Lawson, Walter H., Jr	Postdoctoral	do	H–11526C1	6, 500
Penna, Mario	Special Fellow	Pharmacology	H–131	7, 866
Polgar, George	Special Fellow	Pediatrics	H–9471C2	10, 000
Sigler, Miles H	Postdoctoral	Internal medicine	H–12123C1	7, 000
Institution total, 13 awards, $89,461				
Philadelphia General Hospital				
Warner, Howard F	Postdoctoral	Medicine	H–11562C1	6, 500
Institution total, 1 award, $6,500				

Fellow	Type	Field	Grant No.	Amount
PENNSYLVANIA—Continued				
PHILADELPHIA—Continued				
Temple University				
Caplan, Raymond F	Postdoctoral	Cardiology	H-11378C1	$6,000
Carter, Barbara L	Special Fellow	Radiology	H-8287C3	10,000
Salazar, Andres E	do	Internal medicine	H-11100C1	12,000
Institution total, 3 awards, $28,000				
PITTSBURGH				
Pittsburgh, University of				
Griggs, Douglas M	Postdoctoral	Biochemistry	H-12428	7,030
Masters, Edwin M	do	Anatomy	H-13965	5,500
Wilson, Robert J	do	Medicine	H-11205R1	7,000
Institution total, 3 awards, $19,530				
STATE TOTAL, 21 awards				150,991
RHODE ISLAND (None)				
SOUTH CAROLINA (None)				
SOUTH DAKOTA (None)				
TENNESSEE				
NASHVILLE				
Vanderbilt University				
Battersby, Edward J	Posdoctoral	Medicine	H-10130C1	7,559
Coolidge, Catherine	do	do	H-12264	5,500
Crofford, Oscar B	do	do	H-9876R1	7,000
Weiss, George B	do	Pharmacology	H-9955C2	4,500
Institution total, 4 awards, $24,559				
STATE TOTAL, 4 awards				24,559

Fellow	Type	Field	Grant No.	Amount
TEXAS				
AUSTIN				
Texas, University of				
Herner, Albert E	Postdoctoral	Biochemistry	H-10672C1	$3,000
Institution total, 1 award, $3,000				
DALLAS				
Texas, University of				
Baxter, Charles R	Postdoctoral	Surgery	H-12502	6,500
Baxter, Charles R	do	do	H-12502C1	6,500
Wilcox, William C	do	Medicine	H-11392C1	6,500
Institution total, 3 awards, $19,500				
STATE TOTAL, 4 awards				22,500
UTAH				
SALT LAKE CITY				
Utah, University of				
Ashford, Thomas P	Postdoctoral	Surgery	H-11449C1	8,180
Kassebaum, Donald G	do	Medicine	H-11761C1	5,500
McCuistion, A. C	do	do	H-11606	7,000
Nicholas, Karl R	do	do	H-13796	8,180
Parker, Richard H	do	do	H-11696C1	7,500
Thatcher, Lionel G	do	Pediatrics	H-13958	7,111
Institution total, 6 awards, $43,471				
STATE TOTAL, 6 awards				43,471
VERMONT				
BURLINGTON				
Vermont, University of				
Hanson, John S	Special Fellow	Medicine	H-7248C1	8,000
Jacobson, Julius H	Senior Fellow	Surgery	H-7815	25,752
Randolph, William A	Postdoctoral	do	H-12351	7,565
Institution total, 3 awards, $41,317				
STATE TOTAL, 3 awards				41,317

630825 O - 62 - 13

Fellow	Type	Field	Grant No.	Amount
VIRGINIA				
CHARLOTTESVILLE				
Virginia, University of				
Olichney, Michael J	Postdoctoral	Pharmacology	H-14978	$5, 650
Institution, total, 1 award, $5,650				
RICHMOND				
Virginia, Medical College of				
Frisch, Emanuel	Postdoctoral	Internal medicine	H-13705	7, 544
Jackson, Benjamin T	----do	Surgery	H-9292C2	7, 500
Kaplow, Leonard S	----do	Experimental pathology	H-14861	7, 008
Shapiro, William	----do	Medicine	H-12435	7, 506
Sporn, Irvin N	----do	----do	H-11406C1	6, 500
Institution total, 5 awards, $36,058				
STATE TOTAL, 6 awards				41, 708
WASHINGTON				
PULLMAN				
Washington State University				
Gollnick, Philip D	Postdoctoral	Physical education	H-13792	6, 524
Institution total, 1 award, $6,524				
SEATTLE				
Washington, University of				
Adolph, Robert J	Special Fellow	Physiology	H-11600C1	9, 200
Anderson, Ruth S	Postdoctoral	Medicine	H-5212C4	7, 000
Bainton, Dorothy F	----do	Internal medicine	H-11902	5, 500
Barnett, Guy O	Special Fellow	Physiology	H-13645	7, 749
Bertino, Joseph R	Postdoctoral	Medicine	H-8853C2	7, 500
Branson, Bruce W	----do	----do	H-14337	7, 094
Condon, Robert E	----do	Physiology	H-11220R1	6, 000
Longcope, C	----do	Endocrinology	H-6645R1	5, 735
Novoa, William B	----do	Biochemistry	H-7704C1	5, 000
Parker, Frank	----do	Medicine	H-13665	7, 000
Rackley, Charles E	----do	----do	H-13434	5, 500
Rall, Theodore W	Special Fellow	Pharmacology	H-14000	5, 797

Fellow	Type	Field	Grant No.	Amount
WASHINGTON—Continued				
SEATTLE—Continued				
Washington, University of—Continued				
Sandler, Harold	Postdoctoral	Medicine	H-9643C1	$5,500
Steinmetz, George P	----do	Surgery	H-14658	7,000
Institution total, 14 awards, $91,575				
STATE TOTAL, 15 awards				98,099
WEST VIRGINIA				
MORGANTOWN				
West Virginia University				
Moran, Walter H., Jr	Postdoctoral	Surgery	H-9273C1	6,074
Institution total, 1 award, $6,074				
STATE TOTAL, 1 award				6,074
WISCONSIN				
MADISON				
Wisconsin, University of				
Allen, James R., Jr	Postdoctoral	Pathology	H-8985C2	1,875
Koepke, Donald E	----do	Surgery	H-12042C1	7,500
Pellett, John R	----do	Physiology	H-12938	7,249
Youmans, William B	Special Fellow	----do	H-17120	8,800
Institution total, 4 awards, $25,424				
MILWAUKEE				
Marquette University				
Banaszak, Edward F	Postdoctoral	Physiology	H-7538C1	6,700
Institution total, 1 award, $6,700				
Marquette University School of Medicine				
Johnson, Shirley A	Senior Fellow	Pathology	H-13963	16,896
Institution total, 1 award, $16,896				
STATE TOTAL, 6 awards				49,020
WYOMING (None)				

Fellow	Type	Field	Grant No.	Amount
GUAM (None)				
PUERTO RICO (None)				
VIRGIN ISLANDS (None)				
BELGIUM				
BRUSSELS				
Brussels, University of				
Herner, Albert E	Postdoctoral	Biochemistry	H–10672C1	$3,000
Institution total, 1 award, $3,000				
STATE TOTAL, 1 award				3,000
CANADA				
WINNIPEG, MANITOBA				
Manitoba, University of				
Cooch, Joan N	Postdoctoral	Pharmacology	H–9771C1	1,083
Institution total, 1 award, $1,083				
STATE TOTAL, 1 award				1,083
DENMARK				
COPENHAGEN				
Copenhagen, University of				
Lynn, William S., Jr	Special Fellow	Biochemistry	H–4385R1	3,715
Wolbach, Robert A	do	Physiology	H–12637	4,236
Institution total, 2 awards, $7,951				
STATE TOTAL, 2 awards				7,951

Fellow	Type	Field	Grant No.	Amount
FRANCE				
STRASBOURG				
Strasbourg University				
Patt, Donald I	Special Fellow	Morphology	H-14082	$5,655
Institution total, 1 award, $5,655				
STATE TOTAL, 1 award				5,655
ISRAEL				
PETAH TIQVA				
Beilinson Hospital				
Schwartz, Melvin J	Postdoctoral	Internal medicine	H-12777	6,932
Institution total, 1 award, $6,932				
STATE TOTAL, 1 award				6,932
ITALY				
ROME				
Instituto Superiore de Sanita				
Beaconsfield, Peter	Special Fellow	Biochemistry	H-11091C1	10,000
Institution total, 1 award, $10,000				
Rome, University of				
Bruno, Anthony M	Postdoctoral	Surgery	H-10474C1	7,000
Institution total, 1 award, $7,000				
Faculty of Medicine and Surgery, University of Rome				
Lionetti, Fabian J	Special Fellow	Biochemistry	H-13016	8,229
Institution total, 1 award, $8,229				
STATE TOTAL, 3 awards				25,229

Fellow	Type	Field	Grant No.	Amount
PERU				
LIMA				
Universidad Nacional Mayor de San Marcos				
Blatteis, Clark M	Postdoctoral	Physiology	H-5946C2	$6,862
Institution total, 1 award, $6,862				
STATE TOTAL, 1 award				6,862
SWEDEN				
STOCKHOLM				
Karolinska Institutet				
Killip, Thomas, 3d	Special Fellow	Physiology	H-5179C1	13,000
Institution total, 1 award, $13,000				
STATE TOTAL, 1 award				13,000
SWITZERLAND				
BASEL				
Basel, University of Switzerland				
Lewbart, Marvin L	Special Fellow	Organic chemistry	H-10629C2	10,334
Institution total, 1 award, $10,334				
GENEVA				
Geneva, University of				
Bernstein, L. H	Postdoctoral	Endocrinology	H-13031	7,078
Institution total, 1 award, $7,078				
ZURICH				
Zurich, University of				
Hall, David P	Special Fellow	Surgery	H-11943C1	5,092
Johnston, David B	Postdoctoral	Chemistry	H-10890C1	5,818
Institution total, 2 awards, $10,910				
STATE TOTAL, 4 awards				28,322

Fellow	Type	Field	Grant No.	Amount
UNITED KINGDOM				
CAMBRIDGE				
Institute of Animal Physiology, Agriculture Research Council				
Michaelson, I. A	Postdoctoral	Biochemistry	H-10812C2	$7, 598
Institution total, 1 award, $7,598				
Cambridge University				
McCollester, D. L	Postdoctoral	Biochemistry	H-8695C2	5, 000
McCollester, D. L	----do	----do	H-8695C3	1, 000
Moorjankowski, Jan	Special Fellow	Pathology	H-9538C2	9, 000
Institution total, 3 awards, $15,000				
GLASGOW				
Glasgow, University of				
Hill, Robert B	Postdoctoral	Zoology	H-5211C2	5, 500
Institution total, 1 award, $5,500				
LONDON				
London, University of				
Bruce, Thomas A	Postdoctoral	Medicine	H-9777R1	6, 894
Tuckman, John	----do	----do	H-7244C1	6, 000
Institution total, 2 awards, $12,894				
Institute of Cardiology, University of London				
Saunders, Donald E	Special Fellow	Medicine	H-11806	7, 848
Institution total, 1 award, $7,848				
Postgraduate Medical School, University of London				
Hollister, Robert M	Postdoctoral	Medicine	H-13249	6, 771
Jacobson, George	Special Fellow	----do	H-14856	11, 007
Jewett, Don L	Postdoctoral	Physiology	H-13842	7, 033
Petz, Lawrence D	Postdoctoral	Medicine	H-13593	6, 538
Institution total, 4 awards, $31,349.				
University College, University of London				
Schneiderman, L. J	Postdoctoral	Genetics	H-11588R1	7, 590
Winegrad, Saul	Special Fellow	Biophysics	H-9597C2	9, 090
Institution total, 2 awards, $16,680				

Fellow	Type	Field	Grant No.	Amount
UNITED KINGDOM—Continued				
LONDON—Continued				
Experimental Radiopathology Research Unit—Medical Research Council				
Coniglio, John G	Special Fellow	Biochemistry	H–13290	$10, 701
Institution total, 1 award, $10,701				
OXFORD				
Oxford, University of				
Fagan, Leonard F	Postdoctoral	Pediatrics	H–12178C1	2, 525
O'Loughlin, Bernard	Special Fellow	Radiology	H–13300	9, 016
Peden, James C., Jr	----do	Medicine	H–13856	7, 839
Willis, John S	Postdoctoral	Biology	H–10524C1R1	5, 096
Institution total, 4 awards, $24,476				
STATE TOTAL, 19 awards				132, 046
WEST GERMANY				
GOTTINGEN				
Gottingen, University of				
Marsh, Donald J	Postdoctoral	Physiology	H–9951C2	6, 679
Institution total, 1 award, $6,679				
Faculty of Medicine, University of Gottingen				
Boylan, John W	Special Fellow	Physiology	H–5113C1	14, 700
Institution total, 1 award, $14,700				
HEIDELBERG				
Heidelberg, University of				
Bohr, David F	Special Fellow	Physiology	H–924R1	6, 571
Institution total, 1 award, $6,571				
STATE TOTAL, 3 awards				27, 950

FELLOWSHIP AWARDS TOTALS AND INSTITUTION INDEX

State and institution	Number	Dollars	Page No.
United States			
ALABAMA:			
Alabama, University of	2	13,097	161
Total	2	13,097	
ALASKA (None)			
ARIZONA (None)			
ARKANSAS (None)			
CALIFORNIA:			
California Institute of Technology	1	8,775	163
California, University of	22	138,899	161–3
Children's Hospital	1	7,500	163
City of Hope Medical Center	1	6,904	161
College of Medical Evangelists	3	32,300	162
Institute of Medical Sciences	1	6,500	163
Mount Sinai Hospital	1	7,094	162
Presbyterian Medical Center	1	7,500	163
Scripps Clinic and Research Foundation	2	13,130	162
Stanford University	7	43,743	163
Southern California, University of	5	30,875	162
Veterans' Administration Center	1	5,500	162
Total	46	308,720	
COLORADO:			
Colorado State University	1	7,081	164
Colorado, University of	2	14,078	164
Total	3	21,159	
CONNECTICUT:			
Yale University	4	25,000	164
Total	4	25,000	
DELAWARE (None)			

State and institution	Number	Dollars	Page No.
United States—Continued			
DISTRICT OF COLUMBIA:			
George Washington University	1	14,000	164
Georgetown University	7	73,699	164
Walter Reed Army Medical Center	2	5,844	165
Total	10	93,543	
FLORIDA:			
Florida, University of	3	20,500	165
Miami, University of	3	21,604	165
Total	6	42,104	
GEORGIA:			
Emory University	2	14,000	165
Georgia, Medical College of	1	4,800	166
Total	3	18,800	
HAWAII (None)			
IDAHO (None)			
ILLINOIS:			
Chicago, University of	4	32,960	166
Cook County Children's Hospital	1	7,000	166
Illinois, University of	1	6,500	166
Northwestern University	3	20,529	166
Total	9	66,989	
INDIANA:			
Indiana University Foundation Research Division	3	18,515	167
Total	3	18,515	

FELLOWSHIP AWARDS TOTALS AND INSTITUTION INDEX—Continued

State and institution	Number	Dollars	Page No.
United States—Continued			
IOWA:			
Iowa State University of Science and Technology	1	6, 832	167
Total	1	6, 832	
KANSAS (None)			
KENTUCKY:			
Kentucky, University of	1	6, 000	167
Total	1	6, 000	
LOUISIANA:			
Tulane University	4	23, 500	167
Total	4	23, 500	
MAINE:			
Maine Medical Center	2	12, 526	168
Total	2	12, 526	
MARYLAND:			
Johns Hopkins University	9	59, 196	168
Maryland, University of	4	56, 618	168
National Institutes of Health	11	65, 384	169
Total	24	181, 198	
MASSACHUSETTS:			
Boston University	1	6, 500	169
Harvard University	29	184, 763	170
Massachusetts General Hospital	2	10, 167	169
Massachusetts Institute of Technology	3	32, 724	171
United States—Continued			
MASSACHUETTS—Continued			
Massachusetts Memorial Hospitals	2	18, 000	169
Peter Bent Brigham Hospital	1	7, 000	169
Tufts University	1	6, 500	170
Total	39	265, 654	
MICHIGAN:			
Michigan, University of	3	24, 000	171
Wayne State University	3	21, 500	171
Total	6	45, 500	
MINNESOTA:			
Mayo Clinic	2	12, 820	172
Minnesota, University of	17	119, 652	171
Total	19	132, 472	
MISSISSIPPI:			
Mississippi, University of	6	38, 050	172
Total	6	38, 050	
MISSOURI:			
Kirksville College of Osteopathy and Surgery	1	10, 000	173
St. Louis University	4	28, 071	173
Washington University	3	24, 500	173
Total	8	62, 571	
MONTANA (None			
NEBRASKA (None)			
NEVADA (None)			

FELLOWSHIP AWARDS TOTALS AND INSTITUTION INDEX—Continued

State and institution	Number	Dollars	Page No.
United States—Continued			
NEW HAMPSHIRE:			
Dartmouth College	1	6,500	173
Total	1	6,500	
NEW JERSEY:			
Saint Michael's Hospital	1	6,000	174
Seton Hall College of Medicine and Dentistry	3	22,000	174
Total	4	28,000	
NEW MEXICO (None)			
NEW YORK:			
Bronx Hospital	1	7,000	174
Buffalo, University of	1	5,530	175
Columbia University	18	113,932	175
Cornell University	9	63,431	175
Mount Sinai Hospital	2	11,000	176
New York Medical College	1	5,500	176
New York State University	9	50,296	174, 7
New York University Medical Center	3	19,500	176
New York University	9	65,540	176
New York University School of Medicine	2	19,662	176
Rockefeller Institute	1	9,000	176
Rochester, University of	5	32,000	177
Syracuse University	1	5,292	177
Union University—Albany Medical College	1	10,000	174
Yeshiva University	1	6,500	176
Total	64	424,183	
NORTH CAROLINA:			
Duke University	2	14,000	177
North Carolina, University of	1	6,500	177
Wake Forest College	1	10,000	178
Total	4	30,500	
United States—Continued			
NORTH DAKOTA (None)			
OHIO:			
Cincinnati, University of	1	7,000	178
Mount Sinai Hospital	1	6,472	178
Ohio State University	3	40,262	178
St. Vincent's Charity Hospital	1	16,500	178
Western Reserve University	3	10,250	178
Total	9	80,484	
OKLAHOMA (None)			
OREGON:			
Oregon Medical School, University of	1	3,228	179
Total	1	3,228	
PENNSYLVANIA:			
Drexel Institute of Technology	1	7,500	179
Pennsylvania, University of	13	89,461	179
Philadelphia General Hospital	1	6,500	179
Pittsburgh, University of	3	19,530	180
Temple University	3	28,000	180
Total	21	150,991	
RHODE ISLAND (None)			
SOUTH CAROLINA (None)			
SOUTH DAKOTA (None)			
TENNESSEE:			
Vanderbilt University	4	24,559	180
Total	4	24,559	
TEXAS:			
Texas, University of	4	22,500	181
Total	4	22,500	

FELLOWSHIP AWARDS TOTALS AND INSTITUTION INDEX—Continued

State and institution	Number	Dollars	Page No.
United States—Continued			
UTAH:			
Utah, University of	6	43, 471	181
Total	6	43, 471	
VERMONT:			
Vermont, University of	3	41, 317	181
Total	3	41, 317	
VIRGINIA:			
Virginia, Medical College of	5	36, 058	182
Virginia, University of	1	5, 650	182
Total	6	41, 708	
WASHINGTON:			
Washington State University	1	6, 524	182
Washington, University of	14	91, 575	182
Total	15	98, 099	
WEST VIRGINIA:			
West Virginia University	1	6, 074	183
Total	1	6, 074	
WISCONSIN:			
Marquette University	2	23, 596	183
Wisconsin, University of	4	25, 424	183
Total	6	49, 020	
WYOMING (None)			
United States total	345	2, 432, 864	
Territories			
GUAM (None)			
PUERTO RICO (None)			
VIRGIN ISLANDS (None)			
Foreign Countries			
BELGIUM:			
Brussels, University of	1	3, 000	184
Total	1	3, 000	
CANADA:			
Manitoba, University of	1	1, 083	184
Total	1	1, 083	
DENMARK:			
Copenhagen, University of	2	7, 951	184
Total	2	7, 951	
FRANCE:			
Strasbourg University	1	5, 655	185
Total	1	5, 655	
ISRAEL:			
Belinson Hospital	1	6, 932	185
Total	1	6, 932	
ITALY:			
Instituto Superiore de Sanita	1	10, 000	185
Rome, University of	2	15, 229	185
Total	3	25, 229	

FELLOWSHIP AWARDS TOTALS AND INSTITUTION INDEX—Continued

State and institution	Number	Dollars	Page No.
Foreign Countries			
PERU:			
Universidad Nacional Mayor de San Marcos	1	6, 862	186
Total	1	6, 862	
SWEDEN:			
Karolinska Institutet	1	13, 000	186
Total	1	13, 000	
SWITZERLAND:			
Basel University of Switzerland	1	10, 334	186
Geneva, University of	1	7, 078	186
Zurich, University of	2	10, 910	186
Total	4	28, 322	
UNITED KINGDOM:			
Cambridge University	3	15, 000	187
Experimental Radiopathology Research Unit-Medical Research Council	1	10, 701	188
Foreign Countries			
UNITED KINGDOM—Continued			
Glasgow, University of	1	5, 500	187
Institute of Animal Physiology-Agriculture Research Council	1	7, 598	187
London, University of	9	68, 771	187
Oxford, University of	4	24, 476	188
Total	19	132, 046	
WEST GERMANY:			
Gottingen, University of	2	21, 379	188
Heidelberg, University of	1	6, 571	188
Total	3	27, 950	
Foreign Countries total	37	258, 030	
GRAND TOTAL	382	2, 690, 894	

community programs

GRANTS-IN-AID AND ASSIGNMENT OF PROFESSIONAL PERSONNEL FOR HEART DISEASE CONTROL

ARRANGEMENT OF MATERIAL—TABLE FOUR

Material in this table is arranged alphabetically under two main divisions: (1) States, and (2) Territories.

Figures in parentheses ( ) indicate number of professional personnel assigned to States and Territories.

State	Grants-in-Aid Allocation	Assignment of Professional Personnel	Total
United States			
ALABAMA	$82,100	None	$82,100
ALASKA	27,100	None	27,100
ARIZONA	39,600	$11,000 (1)	50,600
ARKANSAS	58,500	None	58,500
CALIFORNIA	163,100	9,000 (1)	172,100
COLORADO	44,300	29,000 (3)	73,300
CONNECTICUT	45,000	19,000 (2)	64,000
DELAWARE	28,000	None	28,000
DISTRICT OF COLUMBIA	32,000	None	32,000
FLORIDA	86,800	19,000 (2)	105,800
GEORGIA	87,000	56,000 (6)	143,000
HAWAII	32,200	12,000 (1)	44,200
IDAHO	33,100	None	33,100
ILLINOIS	124,200	12,000 (1)	136,200
INDIANA	78,600	None	78,600
IOWA	61,100	None	61,100
KANSAS	51,200	None	51,200
KENTUCKY	77,600	18,000 (3)	95,600
LOUISIANA	73,100	13,000 (1)	86,100
MAINE	37,100	None	37,100
MARYLAND	57,400	22,000 (2)	79,400
MASSACHUSETTS	75,700	None	75,700
MICHIGAN	110,200	6,000 (1)	116,200
MINNESOTA	67,600	9,000 (1)	76,600
MISSISSIPPI	74,200	None	74,200
MISSOURI	75,400	11,000 (1)	86,400
MONTANA	32,300	10,000 (1)	42,300
NEBRASKA	43,100	None	43,100
NEVADA	26,700	None	26,700
NEW HAMPSHIRE	31,400	None	31,400
NEW JERSEY	80,800	10,000 (1)	90,800
NEW MEXICO	36,100	None	36,100
NEW YORK	182,100	42,000 (5)	224,100
NORTH CAROLINA	103,000	11,000 (1)	114,000
NORTH DAKOTA	33,700	19,000 (3)	52,700
OHIO	128,700	16,000 (2)	144,700
OKLAHOMA	56,200	49,000 (5)	105,200
OREGON	45,000	11,000 (1)	56,000
PENNSYLVANIA	153,700	24,000 (3)	177,700

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State	Grants-in-Aid Allocation	Assignment of Professional Personnel	Total
United States—Continued			
RHODE ISLAND	$34, 100	$18, 000 (3)	$52, 100
SOUTH CAROLINA	71, 100	18, 000 (2)	89, 100
SOUTH DAKOTA	34, 400	None	34, 400
TENNESSEE	83, 300	22, 000 (3)	105, 300
TEXAS	151, 600	None	151, 600
UTAH	36, 000	None	36, 000
VERMONT	28, 900	None	28, 900
VIRGINIA	80, 500	9, 000 (1)	89, 500
WASHINGTON	55, 400	12, 000 (1)	67, 400
WEST VIRGINIA	55, 200	4, 000 (1)	59, 200
WISCONSIN	73, 700	9, 000 (1)	82, 700
WYOMING	27, 600	None	27, 600
Territories			
GUAM	9, 800	None	9, 800
PUERTO RICO	77, 400	10, 000 (1)	87, 400
VIRGIN ISLANDS	6, 000	None	6, 000
Total	3, 500, 000	540, 000 (61)	4, 040, 000

summary of totals

SUMMARY OF TOTALS

	Table 1—Research project grants	Table 2—Training grants	Table 3—Fellowship awards	Table 4—Community programs	Total
United States					
ALABAMA	$592, 431	$81, 533	$13, 097	$82, 100	$769, 161
ALASKA	----------	----------	----------	27, 100	27, 100
ARIZONA	34, 615	----------	----------	50, 600	85, 215
ARKANSAS	109, 318	60, 235	----------	58, 500	228, 053
CALIFORNIA	4, 807, 286	722, 656	308, 720	172, 100	6, 010, 762
COLORADO	340, 787	123, 580	21, 159	73, 300	558, 826
CONNECTICUT	423, 200	184, 659	25, 000	64, 000	696, 859
DELAWARE	22, 560	----------	----------	28, 000	50, 560
DISTRICT OF COLUMBIA	1, 114, 266	453, 315	93, 543	32, 000	1, 693, 124
FLORIDA	826, 764	360, 864	42, 104	105, 800	1, 335, 532
GEORGIA	536, 297	504, 736	18, 800	143, 000	1, 202, 833
HAWAII	14, 400	----------	----------	44, 200	58, 600
IDAHO	----------	----------	----------	33, 100	33, 100
ILLINOIS	2, 472, 157	479, 751	66, 989	136, 200	3, 155, 097
INDIANA	920, 300	220, 297	18, 515	78, 600	1, 237, 712
IOWA	230, 237	101, 339	6, 832	61, 100	399, 508
KANSAS	212, 449	24, 997	----------	51, 200	288, 646
KENTUCKY	455, 323	49, 948	6, 000	95, 600	606, 871
LOUISIANA	903, 563	369, 921	23, 500	86, 100	1, 383, 084
MAINE	64, 268	61, 932	12, 526	37, 100	175, 826
MARYLAND	1, 504, 115	493, 086	181, 198	79, 400	2, 257, 799
MASSACHUSETTS	4, 602, 830	1, 076, 591	265, 654	75, 700	6, 020, 775
MICHIGAN	1, 198, 228	159, 157	45, 500	116, 200	1, 519, 085
MINNESOTA	1, 847, 890	704, 073	132, 472	76, 600	2, 761, 035
MISSISSIPPI	327, 234	75, 092	38, 050	74, 200	514, 576
MISSOURI	1, 007, 779	298, 792	62, 571	86, 400	1, 455, 542
MONTANA	18, 128	----------	----------	42, 300	60, 428
NEBRASKA	146, 960	111, 146	----------	43, 100	301, 206
NEVADA	----------	----------	----------	26, 700	26, 700
NEW HAMPSHIRE	217, 545	109, 458	6, 500	31, 400	364, 903
NEW JERSEY	331, 610	73, 492	28, 000	90, 800	523, 902
NEW MEXICO	34, 315	----------	----------	36, 100	70, 415
NEW YORK	6, 674, 684	1, 453, 568	424, 183	224, 100	8, 776, 535
NORTH CAROLINA	1, 690, 445	450, 158	30, 500	114, 000	2, 285, 103
NORTH DAKOTA	10, 005	14, 985	----------	52, 700	77, 690
OHIO	1, 779, 211	381, 431	80, 484	144, 700	2, 385, 826

SUMMARY OF TOTALS—Continued

	Table 1—Research project grants	Table 2—Training grants	Table 3—Fellowship awards	Table 4—Community programs	Total
United States—Continued					
OKLAHOMA	$484,743	$283,153		$105,200	$873,096
OREGON	2,808,575	65,111	$3,228	56,000	2,932,914
PENNSYLVANIA	3,884,225	897,776	150,991	177,700	5,110,692
RHODE ISLAND		32,400		52,100	84,500
SOUTH CAROLINA	255,869	125,212		89,100	470,181
SOUTH DAKOTA	6,210	15,000		34,400	55,610
TENNESSEE	1,009,275	242,646	24,559	105,300	1,381,780
TEXAS	1,312,432	436,303	22,500	151,600	1,922,835
UTAH	257,635	133,435	43,471	36,000	470,541
VERMONT	279,660	37,072	41,317	28,900	386,949
VIRGINIA	336,710	144,814	41,708	89,500	612,732
WASHINGTON	2,512,802	251,963	98,099	67,400	2,930,264
WEST VIRGINIA	103,330	25,000	6,074	59,200	193,604
WISCONSIN	2,382,741	254,954	49,020	82,700	2,769,415
WYOMING	8,928			27,600	36,528
United States total	51,114,335	12,145,631	2,432,864	3,936,800	69,629,630
Territories					
GUAM				9,800	9,800
PUERTO RICO	138,701	71,250		87,400	297,351
VIRGIN ISLANDS				6,000	6,000
Territories total	138,701	71,250		103,200	313,151
Foreign Countries					
ARGENTINA	3,500				3,500
AUSTRALIA	17,797				17,797
CONGO, REPUBLIC OF	27,951				27,951
BELGIUM	23,325		3,000		26,325
BRAZIL	26,170				26,170
CANADA	194,363		1,083		195,446
CHILE	34,580				34,580
COLOMBIA	8,703				8,703

SUMMARY OF TOTALS—Continued

	Table 1—Research project grants	Table 2—Training grants	Table 3—Fellowship awards	Table 4—Community programs	Total
Foreign Countries—Continued					
DENMARK	$12,000	----------	$7,951	----------	$19,951
EL SALVADOR	31,604	----------	----------	----------	31,604
FINLAND	17,420	----------	----------	----------	17,420
FRANCE	----------	----------	5,655	----------	5,655
GREECE	5,000	----------	----------	----------	5,000
INDIA	10,925	----------	----------	----------	10,925
IRELAND	15,985	----------	----------	----------	15,985
ISRAEL	145,707	----------	6,932	----------	152,639
ITALY	42,517	----------	25,229	----------	67,746
JAPAN	37,383	----------	----------	----------	37,383
KOREA	20,930	----------	----------	----------	20,930
LEBANON	13,685	----------	----------	----------	13,685
NETHERLANDS	53,835	----------	----------	----------	53,835
PERU	52,667	----------	6,862	----------	59,529
SWEDEN	284,853	----------	13,000	----------	297,853
SWITZERLAND	----------	----------	28,322	----------	28,322
UNION OF SOUTH AFRICA	73,395	----------	----------	----------	73,395
UNITED KINGDOM	67,423	----------	132,046	----------	199,469
WEST GERMANY	10,879	----------	27,950	----------	38,829
YUGOSLAVIA	5,000	----------	----------	----------	5,000
Foreign Countries total	1,237,597	----------	258,030	----------	1,495,627
GRAND TOTAL	52,490,633	$12,216,881	2,690,894	$4,040,000	71,438,408

grantee index

GRANTEE INDEX

		Page
Abajian, J., Jr	Research	91
Abbott, B. C	do	6
Abelmann, W. H	do	41
Abildskov, J. A	do	56
Abrams, H. L	do	13
Abramson D. I	do	25
Absolon K. B	do	47
	Fellowship	171
Acheson G. H	Research	72
	Training	144
Ackerman, G. A	Research	74
Ackerman, R. F	do	86
Adams, F. H	do	6
Adams J. E	do	11
Adams, W. E	do	24
Adelson E	do	17
Adolph, R. J	Fellowship	182
Afonso, J. F	Research	94
Aggeler, P. M	do	12
Agress, C. M	do	6
Ahlquist, R. P	do	22
Aherns E. H., Jr	do	66
Akenhead, W. R	Training	132
Alaupovic, P	Research	75
Albert, H. M	do	32
Albrink, M. J	do	15
Alexander, A. F	do	15
Alexander, B	do	41
Alexander, C. S	do	47
Alexander, F. M	Fellowship	177
Alexander, J. K	Research	90
	Training	149
Alexander, N	Research	9
Alexander, S	Fellowship	170
Alfin-Slater, R	Research	6
Allen, A	do	79
Allen, J. R., Jr	Fellowship	183
Allen, R. S	Research	29
Allison, F., Jr	do	50
Allison, J. E	do	75
Alpert, N. R	do	25
Altschul, R	do	101
Alzamora, C. V	do	107
Ambrus, J. L	Research	60
Amidon E. L	Training	150
Amundsen, M. A	Fellowship	172
Andersen, M. N	Research	59
Andersen, R. N	Fellowship	161
Anderson, A. E	Research	20
Anderson, G. W	Training	136
Anderson, H. M	Research	62
Anderson, R. S	Fellowship	182
Andrus, E. C	Training	132
Andrus, S. B	Research	41
Angrist, A. A	do	67
Anker, H. S	do	24
Anylan, W. G	do	69
Antlitz, A. M	Fellowship	168
Anton, A. H	Research	20
Antopol, W	do	62
Arias, S. J	do	107
Armstrong, B. W	do	36
Armstrong, G. G., Jr	do	50
Armstrong, W	do	47
Arnold, J, H., Sr	do	69
Aronson, J. F	Fellowship	173
Arrington, T. H	do	172
Aschheim, E	do	176
Ashford, T. P	do	181
Ashworth, C. T	Research	89
Asmundson, V. S	do	5
Assali, N. S	do	7
	Training	124
Astrup, T	Research	18
Attinger, E. O	do	40, 82
Auchincloss, J. H	do	56
Auditore, J. V	do	87
August, J. T	do	13
Austin, W. H	Fellowship	168
Averill, K. H	do	164
Avery, M. E	Research	35
Avery, N. L	Training	136
Baco, D. R	Fellowship	165
Bacon, R. L	Research	77
Baez, S	do	65
Bailey, C. P	Research	80
Bailey, J. M	do	17
Bainton, D. F	Fellowship	182
Baird, D. W	Research	77
Baker, A. B	do	47
Baker, B. M	do	35
Baker, G. P., Jr	Fellowship	170
Baker, S. P	Research	23
Ball, G. H	Training	24
Banaszak, E. F	Fellowship	183
Banaszak, L. J	do	167
Bang, F. E	Research	35
Bank, N	do	65
Barger, A. C	do	41
Bargeron, L. M	do	3
Barlow, G	do	86
Barnes, B. A	do	41
Barnes, R. H	do	51
Barnett, G. O	Fellowship	182
Barnett, H. L	Research	67
	Training	142
Barnhart, M. I	Research	46
Baronofsky, I. D	do	6
Barron, D. H	do	15
Barrow, J. G	do	22
Barry, A	do	45
Bartelstone, H. J	do	62
Bartlett, G. R	do	6
Baskin, R. J	Fellowship	162
Bassett, D. R	do	179
Bassett, S. H	Research	7
Bates, H. R., Jr	do	93
Batson, O. V	do	80
Battaile, J	Fellowship	161
Battersby, E. J	do	180
Baughman, D. J	do	171
Bauman, J. W., Jr	Research	56
Baumel, J. J	do	53
Baxter, C. R	Fellowship	181
Bay, E. B	Training	129
Bayley, R. H	do	145
Beaconsfield, P	Fellowship	185
Beadenkopf, W	Research	58

GRANTEE INDEX—Continued

		Page
Beal, J. L	Research	74
Bean, J. W	do	45
Bean, W. B	Training	131
Beattie, E. J	Research	26
Beber, C. R	Training	127
Beck, C. S	Research	73
Beck, L	do	45
Bedell, G. N	do	29
Beher, W. T	do	45
Belford, J	do	56
Bell, J. W	do	94
Bellet, S	do	81
	Training	146
Bellman, S. E	Research	108
Bellville J. W	do	13
Bender, M. L	do	27
Bender, S. R	do	78
Benditt, E. P	do	94
Bendixen H	do	39
Benesch, R. E	do	62
Bennett, D. R	do	45
Bennett, G	Training	129
Benson, E. S	Research	47
Bentley, H. P	do	3
Bereu, B	do	46
Berenson, G. S	do	32
Bergman, N. A	do	91
Bergren, W. R	do	8
Bergsagel, D. E	do	90
Bergstrom, S	do	108
Berkman, J. I	do	61
Berkowitz, D	do	78
Berman, L. B	do	17
	Training	126
Berne, R. M	Research	73
Bernfeld, P	do	40
Bernstein, E. F	do	47
	Fellowship	171
Bernstein, L. H	do	186
Bernstein, R. E	Research	109
Bernstein, S. E	do	34
Bernthal, T	do	85
Berry, G. P	Training	130
Berson, R. C	Research	3
Bertino, J. R	Fellowship	182
Beuren, A. J	Research	110
Beutler, E	do	6
Bevan, J. A	do	7
Bezman, A. L	Fellowship	162
Bickelman, A. G	Research	59
Bierenbaum, M	do	56
Bing, R. J	do	46
	Training	136
Binkley, F	Research	21
Bird, R. M	do	75
Black, N	do	60
Blackmore, W	do	89
Blades, B. B	do	17
Blair, E	do	36
	Fellowship	168
Blake, T. M	Research	50
Blalock, A	do	35
Bland, E. F	Training	134–5
Blandau, R. J	Research	94
Blankenhorn, D	do	9
Blatteis, C. M	Fellowship	186
Blaustein, A	Research	60
Blazek, W. V	Fellowship	166
Blinks, J. R	Research	41
Bliss, H. A	do	25
Bloch, E. H	do	73
Bloch, K. E	do	41
Block, C	Fellowship	174
Blomstrand, R. L	Research	108
Bloom, W. L	do	22
Blount, R. F	do	89
Blount, S. G., Jr	Training	125
	Research	14
Bluemle, L. W	do	80
Blumenstock, D. A	Fellowship	175
Blumenthal, H	Research	51
Blumenthal, S	Training	140
Blumgart, H. L	do	133
	Research	41
Bobb, J. R	do	70
Bohr, D. F	Fellowship	188
	Research	45
Bohrer, N. K	Fellowship	175
Bonsignore, A	Research	105
Bonte, F. J	do	89
Booker, W. M	do	18
	Training	127
Boone, J. A	do	148
Bor, N. M	Research	21
Borgese, T. A	Fellowship	170
Borgstrom, B	Research	108
Borsook, H	do	10
Bosher, L. H., Jr	do	93
Bottcher, C. J	do	106
Botts, J	do	11
Boucek, R. J	do	19
	Training	127
Bouchard, R. E	Research	91
Bourne, G. H	do	21
Boyd, L. J	Training	141
Boyd, R. J	Fellowship	163
Boyd, W. C	Research	38
	Training	134
Boyden, E. A	Research	94
Boyer, C. C	do	95
Boylan, J. W	Fellowship	188
Boyle, A. J	Research	46
Boyle, E., Jr	do	85
Boyles, P. W	do	19
Bradley, S. E	do	62
	Training	140
Bradshaw, H. H	Training	143
Bradsher, C. K	Research	69
Bragdon, J	do	86
Brand, E. D	do	92
Brande, P. F	Fellowship	170
Brandfonbrener, M	Research	27
Branemark, P	do	107
Branscomb, B. V	do	3
Branson, B. W	Fellowship	182
Brantigan, O. C	Research	34
Braude, A. I	do	83
Braunstein, H	do	72

GRANTEE INDEX—Continued

		Page
Brecher, G. A.	Research	21
Brennan, J. C.	do	34
Brenneman, F. N.	Fellowship	164
Breslow, E. M.	Research	63
Breslow, L.	do	4
Briehl, R. W.	Fellowship	170
Briggs, A. H.	Research	50
Briggs, F. N.	do	40
Brinkhous, K. M.	do	69
Bristow, J. D.	Fellowship	162
Brockman, S. K.	Research	87
Brodeur, A. E.	do	51
Brodie, D. C.	do	11
Brody, A. W.	Training	138
Brody, D. A.	Research	86
Bronte, Stewart B.	do	108
Brooks, C. M.	Training	139
Browe, J. H.	Research	56
Brown, A. L.	do	49
Brown, E.	do	18
Brown, E.	do	11
Brown, E. S.	do	16
Brown, H.	do	96
Brown, I. W., Jr.	do	69, 70
Brown, J. B.	do	74
Brown, K. D.	do	27
Bruce, R. A.	do	94
	Training	151
Bruce, T. A.	Fellowship	187
Bruck, E.	Research	59
Brunner, D.	do	104
Bruno, A. M.	Fellowship	185
Brunson, J. G.	Research	50
Bryant, J. M.	Fellowship	176
Buchanan, J. W.	do	179
Buckley, J. P.	Research	83
Buckley, N. M.	do	67
Bueding, E.	Research	35
Bugliarelle, G.	do	83
Burch, G. E.	do	33
	Training	132
Burckhalter, J. H.	Research	45
Burdette, W. J.	Research	91
	Training	150
Burke, J. D.	Research	92
Burns, R. O.	Fellowship	170
Burrows, B. A.	Research	39
Burrows, B.	do	24
Burrus, R. B.	do	87
Busse, E. W.	do	70
Busser, J. H.	do	78
Butcher, H. R.	do	52
Butler, J. J.	do	55
	Training	139
Butt, E. M.	Research	9
Buxton, R. W.	do	36
Buzina, R.	do	110
Cabrera, G.	do	65
Caciolo, C. P.	do	51
Cade, J. R.	Fellowship	175
Cady, L. D., Jr.	Research	65
	Fellowship	176
Cahill, G. F., Jr.	Research	41
Cain, D. F.	Fellowship	179
Cain, H. D.	do	162
Calcagno, P. L.	Research	59
Caliva, F. S.	do	56
Callow, A. D.	do	39
Calvin, J. L.	Fellowship	164
Calvin, J. W.	do	163
Cameron, B. F.	do	179
Campbell, G. S.	Research	75
Campbell, J. C.	Fellowship	172
Campeti, F. I.	Research	68
Cander, L.	do	78
Cannon, J. A.	do	7
Cannon, J. H.	do	60
Caplan, R. F.	Fellowship	180
Cardozo, R. H.	Research	54
Caren, R.	do	7
Carew, D. P.	do	29
Carlson, F. D.	do	35
Carnes, W. H.	do	91
Carpe, L. M.	Fellowship	162
Carr, C. W.	Research	47
Carr, H. E., Jr.	do	39
Carter, B. L.	Fellowship	180
Carter, H. W.	Research	21
Carton, C. A.	do	7, 58
Cartwright, R.	do	84
Case, R. B.	do	66
Cason, J.	do	5
Cassel, J.	Training	142
Caster, W. O.	Fellowship	171
Castillo, C. A.	Research	96
Castillo, H. M.	Fellowship	166
Castle, W. B.	Research	41
Castleman, B.	do	39
Caughey, W. S.	do	35
Cavert, H. M.	Training	136
Celander, D. R.	Research	89
Ceraolo, G.	Feliowship	176
Cervoni, W. A.	Research	98
Chace, J. A.	Fellowship	173
Chaikoff, I. L.	Training	123
	Research	5
Chalmers, T. C.	do	41
Chance, B.	do	80
Chandler, A. B.	do	22
Chang, C. C.	do	47
Chang, C. H.	do	15
Chanutin, A.	do	92
Chapman, C. B.	do	89
	Training	149
Chapman, J. M.	Research	7
Chapman, R. G.	do	14
Chapman, W. L.	Fellowship	167
Chase, H. F.	Research	79
Chasis, H.	do	65
Chein, S.	do	62
Cherny, W. B.	do	70
Chesley, L. C.	do	57
Chilcote, M. E.	do	59
Child, C. G., 3d.	do	45
Childress, R. C.	Fellowship	165
Cholvin, N. R.	do	167
Chown, B.	Research	101

GRANTEE INDEX—Continued

		Page
Christensen, G. C	Research	28
Christian, J. J	do	82
Chung, A. C	do	80
Ciocco, A	do	83
Claff, C. L	do	67
Clapper, M	Training	136
Clark, J. K	Research	80
Clark, W. G	do	7
Clarke, J. S	do	5
Clarke, R. L	Fellowship	175
Clatanoff, D. V	Research	96
Clauss, R. H	do	65
Cleland, W. W	do	96
Clements, L. P	do	53
Cliffton, E. E	do	63, 64
Clowes, G. H. A	do	73
Clynes, M. E	do	61
Coburn, R. F	Fellowship	179
Cogan, D. G	Research	39
Cohart, E. M	Training	126
Cohen, B. H	Research	35
Cohen, G	do	62
Cohen, M. M	do	47
Cohen, S. G	do	84
Cohn, R. B	do	13
Collier, C. R	do	6
Collins, H. A	do	87
Collins, S	do	43
Colwell, A. R	Training	130
Combes, B	Research	89
Compere, E. L	do	46
Comroe, J. H., Jr	do	11
	Training	124
Condon, R. E	Fellowship	182
Coniglio, J. G	do	188
Conley, C. L	Research	35
Conner, E. H	do	31
Connolly, J. E	do	13
Connor, W. E	do	29
Conway, E. J	do	104
Cooch, J. N	Fellowship	184
Cook, C. D	Research	41
Coolidge, C	Fellowship	180
Coon, R. W	Research	91
Coons, A. H	do	41
Cooper, F. W., Jr	do	21
Cooper, W. G	do	14
Cooper, W. A	do	88
Cope, O	do	41
Copenhaver, J. H	do	54
Copenhaver, W	do	62
Copley, A. L	do	65
Corcoran, A. C	Fellowship	178
Corday, E	Research	7, 8
Coret, I. A	do	51
Correll, H. L	Training	152
Cotten, M. D	Research	21
Coulson, R. A	do	32
Cournand, A	do	62
	Training	140
Courtois, G	Research	107
Cowley, R. A	do	36
Cox, G. E	do	27
Coye, R. D	do	96
Cozart, D. E	Fellowship	173
Craig, J. C	Research	11
Craige, E	Training	142
Crane, M. G	Research	8
Crawford, E. S	do	90
Cree, E. M	do	96
Creech, B. G	do	90
Creech, O., Jr	do	33
	Training	132
Crescenzi, A. A	Research	67
Crispell, K. R	Training	150
Crockett, J. E	do	131
Crofford, O. B	Fellowship	180
Crosley, A. P	Research	80
Crout, J	Fellowship	170
Crowell, J. W	Research	50
Crump, J. F., Jr	Fellowship	174
Crumpton, C. W	Research	96
	Training	152
Cruze, K	Fellowship	165
Cugell, D. W	Research	26
Culbertson, J. W	do	86
Cunningham, A	Research	89
Cunningham, N	Fellowship	175
Curran, G. L	Research	51
Cuthbertson, E. M	Fellowship	162
	Research	12
Cuttino, J. T	Training	148
Dahlen, R. W	Research	38
Daiber, W. F	Training	146
Dale, W. A	Research	87
Dallam, R. D	do	31
Daly, M. M	do	67
Dammin, G. J	do	40, 41
	Training	134
Dana, B. S	do	134
Danforth, W. H	Fellowship	173
Daniel, D. J	Training	124
Darby, T. D	Research	33
Darby, W. J	Training	149
Dart, S. L	Fellowship	162
Data, J. B	Research	28
Davidson, W. D	Fellowship	179
Davies, M. A	Research	104
Davies, R. E	do	80
Davila, J. C	do	82
Davis, D. L	do	22
Davis, D. E	do	84
Davis, G. K	do	20
Davis, R. B	do	47
Davison, J. A	do	32
Dayton, S	do	7
DeAlvarez, R. R	do	94
DeArrellano, R	do	98
DeBakey, M. E	do	90
	Training	149
DeFreitas, F. M	Fellowship	169
DeMaria, W. J	Research	70
DeVries, A	do	104
DeWeese, J. A	do	68
Deitrich, R. A	Fellowship	168
Deming, Q. B	Research	67
Dennis, C	do	57

GRANTEE INDEX—Continued

		Page
Dennis, E. W	Training	149
Denslow, J. S	Research	51
Deterling, R. A	do	40
Detweiler, D. K	do	80
Dexter, L	do	41
	Training	135
Deyrup, I. J	Research	63
DiLuzio, N	do	86
DiPalma, J. R	do	78
Diamond, L. K	do	38
	Training	134
Diazrivera, R. S	do	151
	Research	98
Dickson, J. F	Fellowship	171
Diggs, L. W	Research	86
Dillon, M. L	do	70
Dimond, E. G	do	6
Dingman, J. F	do	33
Discher, C. A	do	55
Djerassi, C	do	13
Djerassi, I	do	78
Dock, W	do	57
	Training	139
Dodd, M. C	Research	74
Dodge, H. T	do	94
Dohan, F. C	do	80
Donald, D. E	do	49
Dong, E., Jr	Fellowship	163
Donomae, I	Research	105
Dorfman, A	do	24
Dorfman, R. I	do	43
Dossetor, J. B	Fellowship	176
Dotter, C. T	Research	77
Douglas, G. W	do	65
Doumanian, A. V	Fellowship	172
Dow, J. W	Research	82
	Training	146
Draper, H. H	Research	27
Dreifus, L	do	78
Dripps, R. D	do	80
	Training	146
Drucker, W. D	Fellowship	175
Drury, D. R	Research	9
Dubois, A. B	do	80
Dufano, M	do	40
Duncan, C. H	do	31
Dunihue, F. W	do	91
Dunn, F. L	Training	138
	Research	53
Dutton, R. E., Jr	Fellowship	168
Duvigneaud, V	Research	63
Eadie, G. S	do	70
Earle, D. P., Jr	Training	130
	Research	27
Eaton, J. W	Training	147
Ebert, R. V	Research	4
	Training	123
Ebnother, C. L	Research	10
Eckstein, J. W	do	29
Eckstein, R. W	do	73
Edelman, I. S	do	11
Eder, H. A	do	67
	Training	142
Ederstrom, H. E	do	143
	Research	71
Edman, T	do	81
Edmark, K. W	do	94
Edsall, J. T	do	41
Edwards, J. E	do	49
Edwards, M. J	Fellowship	179
Edwards, W. S	Research	3
Eiber, H. B	do	65
Eich, R. H	do	57
Eichbaum, F	do	100
Eichenholz, A	do	47
Eichhorn, R. L	Training	130
Eiseman, B	Research	14
Eisenberg, H	do	15
Eisenberg, S	do	89
Eisenger, R. P	Fellowship	176
Eisner, G. M	do	176
Elbel, E. R	Research	30
Elderfield, R	do	45
Eldridge, F	do	13
Elias, H	Research	23
Elkind, A. H	Fellowship	175
Elkinton, J. R	Research	80
Ellis, F. R	do	46
Ellis, L. B	do	41
	Training	135
Ellison, R. G	Research	22
Ells, H. A	do	75
Eldmadjian, F	do	43
Enerson, D. M	do	57
Engelberg, H	do	8
Ennis, A. L	Fellowship	161
Enns, T	Research	35
Entrup, R. W	Fellowship	173
Epifano L. D	do	177
Epstein, F. H	Research	15
Erdos, E. G	do	83
Erickson, C. C	do	86
Ernst, R. W	do	89
Ershoff, B. H	do	5
Ersley, A. J	do	79
Escher, D. J. W	do	58
Esmond, W. G	do	36
Etsten, B	do	40
Etteldorf, J. N	do	86
	Training	148
Evans, E	Research	21
Evans, J. D	do	82
Evans, J. M	Training	126
Eveleth, D. F	Research	71
Everett, N. B	do	94
Eyring, H	do	91
Fabian, L. W	do	50
Fagan, L. F	Fellowship	162, 188
Failey, R. B., Jr	Research	28
Falor, W. H	do	71
Fanestil, D. D	Fellowship	162
Farah, A. E	Research	57
Farber, E. M	do	13
Farber, S. J	do	65
Feder, W	Fellowship	166
Feigen, G. A	Research	13

		Page
Feigen, I. H	Research	65
Feigl, E. O	Fellowship	179
Feinberg, L. J	Research	81
Feinsilver, O	do	44
Feinstein, A. R	do	61
Feith, E. F	do	90
Feldman, A	do	14
Feldman, F	do	59
Feldman, G. L	do	90
Feldman, H. A	do	57
Fellers, F. X	do	41
Felts, J. M	Fellowship	162
Ferguson, A. D	do	175
Ferguson, D. J	Research	24
Ferguson, I. A	Training	128
Ferguson, J. H	Research	69
Ferguson, R. E	Fellowship	163
Fessas, P	Research	103
Fetterman, G. H	do	83
Fidanza, F	do	105
Field, H., Jr	do	17
Fields, J	do	8
Fields, W. S	do	90
Filler, J	do	65
Filley, G. F	do	14
	Training	125
Fillios, L. C	Research	41
Finch, C. A	do	94
Finch, S. C	do	15
Fine, J	Training	133
	Research	41
Finn, A. L	Fellowship	177
Finnerty, F. A	Research	17
Fischel, E. E	do	58
Fisher, B	do	83
Fisher, H	do	55
Fisher, J. H	do	37
Fisher, R. S	Training	133
Fishman, A. P	Research	62
Flanagan, C. L	do	26
Fleet, H. M	Fellowship	165
Fleisher, D. S	Research	82
Fletcher, T. L	do	94
Flick, J. A	Research	80
Flink, E. B	Training	151
Florey, H. W	Research	109
Florsheim, W. H	do	7
Folden, D. B., Jr	do	86
Folkow, B. U	do	107
Fopeano, J. V., Jr	do	59
Foraker, A. G	do	20
Formel, P. F	Training	140
Forster, R. E	Research	80
	Training	146
Forster, R. P	Research	54
Forster, J. H	do	87
Foulkes, E. C	do	72
Fowler, N. O	do	72
	Training	143
Fowler, W. S	Research	49
Fox, A. C	do	65
Fox, M. H	do	32
Fozzard, H. A	Fellowship	173
Frahm, C. J	do	169
Francis, T., Jr	Research	45
Frank, C. W	do	67
Frank, H. A	do	41
Frank, L	do	57
Frank, M. J	Fellowship	174
Franke, E. K., Jr	Research	72
Frantz, I. D., Jr	do	47
Frasher, W. G	Fellowship	162
Fredell, E. W	Research	10
Freed, S. C	do	12
Freedberg, A. S	do	41
Fregly, M. J	do	20
Freis E. D	do	17
French D. M	do	18
French, G. N	do	80
Friedberg, C. K	Training	141
	Research	64
Friedman I	Fellowship	175
Friedman, J. J	Research	28
Friedman, M	do	12
Friesinger, G. C	Fellowship	168
Frisch, E	do	182
Froeb, H. F	Research	61
Fudenberg H	do	11
Fujimoto, G. I	do	67
Fulton, G. P	do	38
	Training	134
Furchgott, R. F	Research	57
Furman, R. H	do	75
	Training	145
Fyler, D. C	do	124
Gabler, W. L	Fellowship	166
Gabor, G. E	do	175
Gabrio, B. W	Research	94
Gabuzda, T. G	Fellowship	170
Gaensler, E. A	Research	38
Galambos, J. T	do	21
Galdston, M	do	65
Galla, S. J	do	73
Galleti, P. M	do	21
Gallop P. M	do	67
Gamble, W	Fellowship	175
Gammon, G. D	Research	80
Ganong, W. F	do	11
Gans, H	Fellowship	171
Ganslen, R. V	Research	4
Gantt, W. H	do	35
Garcia, A. M	Fellowship	175
Garcia, C. U	Research	107
Garcia-Palmeri, M	Training	152
Gardberg, M	Research	33
Gardier, R. W	do	28
Gardner, D. L	do	109
Gardner, F. H	do	41
Gaston, L. W	do	39
	Fellowship	169
Gasul, B. M	Research	24
Gaunt, R	do	56
Gavan, T. L	do	73
Gazes, P. C	do	85
Geer, J. C	do	32
Geiger, W. B	do	78
Gelber, B	do	40
Geller L	do	8

GRANTEE INDEX—Continued

		Page
Gensler, W. J	Research	38
George, J. M	Fellowship	170
Gerald, P. S	Research	38
Gerbode, F	do	12
	Training	125
Gergely, J	Research	40
Gertler, M. M	do	65
Geselowitz, D. B	do	80
Getting, V. A	Training	136
Getty, R	Research	29
Gevirtz, N	Fellowship	176
Gholson, R. K	do	171
Gibbon, J. H., Jr	Research	79
	Training	146
Giblett, E. R	Research	93
Gibson, D. M	do	28
Gibson, J. G., 2d	do	41
Gieschen V. W	Fellowship	162
Gilbert, R. P	Research	27
Gilfillan, R. S	do	12
Gillespie, J. F	Fellowship	164
Gilman, A	Research	67
Gilmore, B. L	Fellowship	165
Giordano, C	Research	105
Givertz, B	Fellowship	178
Glabman, S	do	175
Glagov, S	Research	24
Glaser, W	do	57
Glasser, R. L	do	69
Glaviano, V. V	do	25
Glenn, W. W. L	do	15
Glick, D	do	47
Glick, G	Fellowship	177
Glick, J. H. Jr	Research	55
Glicklick, M	do	97
Glimcher, M. J	do	39
Glueck, H. I	do	72
Goddard, R. F	do	56
Goetz, R. H	do	67
Gofman, J. W	do	5
Gold. H	do	62
Goldberg, H	do	78
Goldblatt, H	do	73
Goldenberg, S	Research	51
Goldfarb, B. L	Fellowship	171
Goldfischer, J. D	do	175
Golding, L. A	Research	75
Goldman, A. G	do	58
Goldring, D	do	52
Goldschmidt, L	do	61
Goldsmith, G. A	do	33
	Training	132
Goldstein, R	Research	40
Goldwater, L	Training	140
Golinko, R. J	Fellowship	176
Gollan, F	Research	19
Gollnick, P. D	Fellowship	182
Gonzales, L. F	Research	36
Good, R. A	do	47
	Training	136
Goodall, McC	Research	86
Goodman, A. D	Fellowship	169
Goodman, A. I	do	164
Goodwin, S. M	Research	5
Goodyer, A. V	do	15
	Training	126
Goott, B	Fellowship	171
Gordon, A. J	Research	64
Gordon, Archer S	do	56
Gordon, Albert S	do	65
Gordon, E. S	do	96
Gore, I	do	41
Gorlin, R	do	40, 41
Gorman, J. G	do	62
Goss, C. M	do	32
	Training	132
Gott, V. L	Research	96
Gottschalk. C. W	do	69
Gould, R. G	do	13
Gould, S. E	Training	136
Graettinger, J. S	Research	26
Graham, H. T	do	52
Graham, J. B	do	69
Grande, F	do	47
Granston. A. S	do	24
Gravenstein, J. S	do	20
Gray, F. D	Research	15
Gray, J. S	Training	130
Grayzel, J	Fellowship	175
Green, D. E	Research	96
Green, H. D	do	70
	Training	143
Greenberg, D. M	Research	11
Greene, J. A., Jr	Fellowship	171
Greene, M. A	Research	58
Greene, N. M	do	15
Greenspan, R	do	16
Greenwalt, T. J	do	98
Greifenstein, F. E	do	46
Greisman, S. E	Fellowship	168
Griffith, G. C	Training	124
Griffith, W. H	Research	7
	Training	124
Griggs, D. E	do	124
Griggs, D. M	Fellowship	180
Grim, E. D	Research	47
Grimson, K. S	do	70
	Training	143
Grissom, R. L	Research	53
Griswold, H. E	do	76, 77
	Training	145
Grodins, F. S	Research	26
Groen, J. J	do	104
Grollman, A	do	89
Groom, D	do	85
Groover, M. E	do	90
Gross, R. E	do	38
Gross, S	do	73
Gross, W. B	do	92
Grossman, C. M	do	77
Grupp G	do	72
Gryska, P. F	do	41
Guest, M. M	do	89
Gulotta, S. J	Fellowship	175
Gunn, C	Research	75
Guntheroth, W	do	94
Gurd, F. R	do	28
Gurdjian, E. S	do	46
Gurin, S	do	80

630825 O - 62 - 15

GRANTEE INDEX—Continued

		Page
Gut, M.	Research	43
Gutstein, W. H.	do	65
Guyton, A. C.	do	50
	Training	137
Guze, L. B.	Research	7
Hack, M. H.	do	33
	Training	132
Hackel, D. B.	Research	70
Hackney, J. D.	do	80
Hahn, J. W.	do	90
Haidak, G. L.	do	58
Haimovici, H.	do	38, 58
	Training	140
Hajjar, G. C.	Fellowship	165
Hale, A. R.	Research	33
Hales, M. R.	do	16
Hall, B. V.	do	27
Hall, C. E.	do	89
Hall, D. P.	Fellowship	186
Hall, E. K.	Research	31
Haller, J. A., Jr.	do	31
Ham, Thomas H.	do	73
Hames, C. G.	do	23
Hamilton, L. H.	do	97
Hamilton, W. F.	do	22
	Training	128
	Fellowship	166
Hamlin, R. L.	do	178
Hammarsten, J. F.	Research	75
Hammer, E. I.	Fellowship	170
Hammon, W. M.	Training	147
Hampton, J. K., Jr.	Research	33
Hanania, G. I.	do	106
Hanig, M.	do	83
Hanlon, C. R.	do	51
	Training	138
Hansen, A. E.	Research	10
Hanson, J. S.	Fellowship	181
Hanssen, O. E.	do	174
Hara, M.	Research	4
Harden, K. A.	do	18
Hardman, H. F.	do	97
Hardy, A. V.	Research	20
	Training	127
Hardy, J. D.	Research	50
Harken, D. E.	do	41
Harkin, J. C.	do	64
Harkins, H. N.	do	94
Harlan, W. R.	Fellowship	177
Harlow, H. F.	Research	96
Harman, D.	do	53
Harned, H. S.	do	69
Harrell, B.	do	93
Harris, A. S.	do	32
Harris, H. W.	do	82
Harris, J. S.	do	70
	Training	143
Harris, L. E.	Research	11
Harris, T. N.	do	78
Harrison, T. R.	do	3
	Training	123
Harshaw, D. H., Jr.	Fellowship	174
Hartmann, R. C.	Research	87
Hartroft, W. S.	do	52
Hartwell, A. S.	do	23
Harvey, H. M.	do	9
Harvey, R. B.	do	91
Harvey, W. P.	Training	127
	Research	17
Hashim, S. A.	Fellowship	175
Hass, G. M.	Research	26
Hatch, T.	do	83
Haugaard, N.	do	80
Havel, R. J.	do	11
Hawthorne, E. W.	do	18
Hayden, R. O.	Fellowship	171
Haywood, C.	Research	43
Heaney, R. P.	Training	138
Hecht, H. H.	Research	91
	Training	150
Hecker, S. P.	Research	10
Hegnauer, A. H.	do	38
Heim, H. C.	do	14
Hellegers, A. E.	do	35
Hellems, H. K.	do	55
Hellerstein, E. E.	Research	42
Hellman, D. W.	Fellowship	169
Hellman, L.	Research	64
Hellman, L. M.	do	57
Helmboldt, C.	do	16
Helmsworth, J. A.	do	72
Hemingway, A.	do	7
Henderson, L. W.	Fellowship	170
Hendricks, C.	Research	73
Hennigar, G. R.	do	57
Henstell, H. H.	do	9
Heptinstall, R. H.	do	52
Herndon, C. N.	do	70
Herner, A. E.	Fellowship	181, 184
Hertzman, A. B.	Research	51
Herzog, L. F.	do	84
Hess, E. L.	do	43
Hess, G. P.	do	61
Heyl, H. L.	Training	139
Heymans, C.	Research	100
Hibbs, R. G.	do	33
Hickam, J. B.	do	28
	Training	130
Higgens, L. S.	Fellowship	179
Higginbotham, A. C.	Research	95
Hill, R. B.	Fellowship	187
Hill, R. M.	Research	14
Hill, T. L.	do	76
Hilton, J. G.	do	97
Hinshaw, L. B.	do	47
Hirschhorn, K.	do	65
Hirst, A. E., Jr.	do	8
Hitchcock, C. R.	do	47
	Training	136
Hitchcock, F. A.	Research	74
Hoff, H. E.	do	90
	Training	149
Hoffman, B. E.	Research	57
Hogben, C. A.	Training	126
Hogness, D. S.	Research	13
Holland, W. C.	do	50
Hollander, P. B.	Fellowship	162
Hollander, W.	Research	69

GRANTEE INDEX—Continued

		Page
Hollander, W.	Fellowship	169
Hollenberg, C.	Research	101
Hollenberg, M.	Fellowship	170
Holling, H. E.	Research	80
Hollister, R. M.	Fellowship	187
Holman, R. T.	Research	47
Holman, R. L.	Training	132
Holmes, J. H.	Research	14
Holt, J. P.	do	31
Holter, N. J.	do	53
Hon, E. H.	do	8
Honig, C. R.	do	68
Hoobler, S. W.	do	45
	Training	136
Hook, E.	Research	63
Horn, L.	Fellowship	176
Horowitz, H. I.	Research	63
Horvath, S. M.	do	80
Hougie, C.	do	94
Houston, C. S.	do	15
Hovanian, H. P.	do	44
Howard, J. M.	do	78
Howard, R. B.	do	47
Howell, D. A.	Training	143
Howenstine, J. A.	Fellowship	163
Hsia, D. Y.	Training	129
Huang, T. C.	Research	72
Huckabee, W. E.	do	39
Huffman, J. W.	do	85
Hufnagel, C. A.	do	11
Hugenholtz, P. G.	Fellowship	170
Huggins, C. E.	Research	39
Huggins, R. A.	do	90
Huisman, T. H.	do	22
Huitric, A. C.	do	94
Hukill, P. B.	do	16
Hulet, W. H.	do	19
Hultgren, H. N.	do	13
	Training	125
Hume, W. I., Jr.	Research	31
Humphreys, G. H., 2d	do	62
Hungerford, G.	do	9
Hunt, T. E.	do	3
Hunter, S. W.	Research	47
Hurley, E. J.	Fellowship	163
Hurst, J. W.	Training	128
Husson, G. S.	do	139
Hutcheon, D. E.	Research	55
Hyatt, R. E.	do	95
Hyde, R. W.	Fellowship	179
Hyland, J. W.	do	170
Hyman, C.	Research	9
Hyun, B. H.	do	93
Iannone, A. M.	do	48
Imbriglia, J. E.	do	78
Imig, C. J.	do	29
Insull, W., Jr.	do	73
Irwin, G. W.	Training	130
Iseri, L. T.	Research	6
Ivy, A. C.	do	25
Iyengar, R. M.	do	83
Jackson, B. T.	do	83
	Fellowship	182
Jacob, H. S.	do	170
Jacobey, J. A.	do	170
Jacobi, H. P.	Research	53
Jacobs, E. E.	do	54
Jacobs, H. R.	do	27
Jacobs, W. A.	Fellowship	165
Jacobson, G.	do	187
Jacobson, J. H.	Research	91
	Fellowship	181
Jacobson, L. O.	Research	24
Jacobson, L. F.	do	46
Jacobson, M.	do	17
Jacques, F. A.	Fellowship	173
James, J. N.	Research	45
Janeway, C. A.	do	43
Janoff, A.	Fellowship	176
Jaques, L. B.	Research	101
Jaques, W. E.	do	76
	Training	145
Jaretzki, A.	Research	60
Jayne, E. P.	do	16
Jedeikin, L. A.	Research	67
Jeghers, H.	Training	139
Jenkins, D. E., Jr.	Fellowship	175
Jenkins, M. E.	Research	18
Jenkins, W. T.	do	5
Jensen, R. G.	do	16
Jewett, D. L.	Fellowship	187
Jim, R. T.	Research	23
Jochim, K. E.	do	30
Johnson, A. J.	do	65
Johnson, E. E.	Fellowship	166
Johnson, F. E.	Research	47
Johnson, J. R.	do	53
Johnson, J. A.	do	48
Johnson, J. B.	Training	127
Johnson, P. C.	Research	28
Johnson, R. M.	do	74
Johnson, R. L.	do	89
Johnson, S. A.	do	97
	Fellowship	183
Johnson, W. L.	Research	61
Johnson, W. E.	do	98
Johnston, D. B.	Fellowship	186
Johnston, F.	Training	136
Johnston, R. B.	Research	53
Jones, D. B.	do	57
Jones, H. B.	do	5
Jones, J. C.	do	37
Jones, R. E.	do	96
Jones, R. J.	do	24
Jones, R. T.	Fellowship	163
Jones, R. S.	Research	91
Jones, W. B.	do	3
Jordan, J.	do	84
Jordan, P., Jr.	do	46
Jorpes, J. E.	do	108
Judson, W. E.	Training	130
	Research	28
Julian, O. C.	do	25
Kahl, R. J.	do	98
Kahlson, G. S.	do	108
Kahn, A. J.	do	55
Kaley, G.	Fellowship	176

GRANTEE INDEX—Continued

		Page
Kalf, G. F	Research	55
Kallen, F. C	do	168
Kalz, F	do	101
Kane, A. A	do	59
Kane, J. P	Fellowship	163
Kantrowitz, A	Research	57
Kao, F. F	do	57
Kaplan, M. E	Fellowship	170
Kaplan, M. H	Research	73
Kaplan, S.	do	72
	Training	143
Kaplow, L. S	Fellowship	182
Kark, R. M	Research	25
Karlson, K. E	Training	139
Karpeles, L. M	Research	36, 94
Karush, F	do	80
Karvonen, M. J	do	103
Kassebaum, D. G	Fellowship	181
Katcher, A. H	do	179
Kattus, A. A., Jr	Training	124
Katz, L. N	Research	25
	Training	129
Kaufman, R. M	Fellowship	164
Kavaler, F	Research	57
Kay, C. F	do	80
	Training	146
Kay, E. B	Research	73
Kay, J. H	do	9
Kazal, L. A	do	79
Keech, M. K	do	46
Keitel, H. G	do	79
Kellner, A	do	63
Kelly, W. D	do	48
Kelser, G. A	do	17
Kempner, W	do	70
Kendall, F. E	do	62
Kendrick, J. E	do	96
Kershbaum, A	do	81
Kessler, W	Fellowship	164
Keyl, M. J	Training	145
Keys, A	Research	48
Kezdi, P	do	26, 27
Kien, G. A	do	25
Killen, D. A	Research	87
Killip, T., 3d	do	63
	Fellowship	186
Kimbel, P	Research	78
King, E. J	do	63
King, L. R	Fellowship	178
King, S. E	Research	66
King, T. E	do	76
Kinney, T. D	do	70
Kinsell, L. W	do	10
Kinsey, D	do	39
Kiplinger, G. F	do	38
Kirby, J. C., Jr	Fellowship	164
Kirk, J. E	Research	52
Kirkendall, W	Training	131
Kirshner, N	Research	70
Kisch, B	do	60
Kissane, J. M	do	52
Kittle, C. F	do	30
Kivel, R. M	do	13
Klein, H. P	do	43
Klein, R. L	do	50
Klionsky, B	do	30
Klip, W	do	3
Klotz, I. M	do	27
Kneisel J. J	do	67
Knisely, M. H	do	85
	Training	148
Knisely, W. H	Research	30
Knoefel, P. K	do	31
Knowles, H. C	do	72
Knowles, J. H	do	39
Koch-Wester, J	Fellowship	170
Koepke, D. E	do	183
Kohn, R. R	Research	73
Koletsky, S	do	73
Kolff, W. J	do	73
Kolin, A	do	7
Kornel, L	do	3
Kossmann, C. E	Training	141
Kottke, B. A	Fellowship	172
Kouwenhoven, W	Research	35
Krahl, V. E	do	36
Krakower, C. A	Research	25
Kramar, J	do	53
Kramish, D	do	14
Krampitz, L. O	do	73
Krantz, K. E	do	30
Krasnow, N	Fellowship	170
Kraus, L. M	Research	86
Krause, R. F	do	96
Krayer, O	do	42
Kreel, I	do	64
Kreidberg, M	do	37
Kretchmer, H. E	do	73
Kreuzer, F	do	54
Kritchevsky, D	do	82
Krivit, W	do	48
Kruger, G. O	do	17
Kuffler, S. W	Training	135
Kuhn, L. A	Research	64
Kummerow, F. A	do	27
	Training	130
Kuo, P. T	Research	81
Kupchan, S. M	do	96
Kupfer, H. G	do	93
Kupfer, S	do	64
Kurnick, N. B	do	7
Kurtz, H. M	do	8
Kurtz, S. M	do	83
Kusserow, B. K	do	91
Kutt, H	do	63
Kuttner, A. G	do	65
Kyle, L. H	Training	127
LaDue, J. S	Research	64
Lack, L	do	35
Lade, R. I	Fellowship	171
Lakshmanan, S	Research	37
Lambert, E. C	Training	140
Lamkee, M. J	Research	94
Lamy, F	do	83
Lancefield, R	do	66
Lanchantin, G	do	8
Landesman, R	do	63
Landis, E. M	do	47
Landowne, M	do	36

GRANTEE INDEX—Continued

		Page
Lane, C. E.	Training	127
Lane, T. J.	Research	29
Langdon, R. G.	do	35
Lange, K.	do	79
Lange, R. D.	do	52
Langford, H. G.	do	50
Langston, J. B.	do	50
	Fellowship	172
Lankford, H. G.	Research	50, 51
Lansing, A. I.	do	83
	Training	147
Laragh, J. H.	Research	62
Lary, H. A.	do	97
Lasagna, L.	do	35
Latorre, G.	do	102
Lautsch, E. V.	do	82
Lawrence, J. H.	do	5
Lawson, W. H., Jr.	Fellowship	179
Lazzara, R.	do	167
Lazzarini, R.	Research	66
Leach, J. K.	Fellowship	174
Leaf, A.	Research	39
Leaman, W. G., Jr.	Training	147
Lederman, M.	Fellowship	170
Lee, J. B.	do	170
Lee, K. S.	Research	57
Lee, K. T.	do	52, 58
Lee, T. D., Jr.	Fellowship	168
Lee, W. C.	Research	106
Leedham, C. L.	Training	144
Leeds, S. E.	Research	12
Lees, R. S.	Fellowship	169
Leese, C. E.	Research	17
Leevy, C. M.	do	55
Lehan, P. H.	Fellowship	174
Lehman, J. S.	Research	78
Lehr, D.	do	65
Leight, L.	do	31
Leiken, S. L.	do	17
Leiter, L.	do	58
Lemmon, W. M.	do	65
Lendrum, B. L.	do	24
Lennarz, W. J.	Fellowship	170
Lentini, E. A.	Research	77
Leonard, J. J.	do	89
	Training	149
Lepeschkin, E.	Research	91
Lepley, D., Jr.	do	97
Lequire, V. S.	do	87
Letteri, J. M.	Fellowship	176
Lev, M.	Research	24, 25
Leveque, P. E.	do	17
Levinsky, N. G.	do	39
Levitsky, J. M.	Fellowship	168
Levitt, M. F.	Training	141
Levy, B.	Research	22
Levy, H. A.	do	78
Levy, J. V.	do	12
Levy, M. N.	do	73
Levy, R. S.	do	'31
Lewbart, M. L.	Fellowship	186
Lewis, B. M.	Research	46
Lewis, D. H.	do	81
Lewis, E. W., Jr.	Fellowship	162, 176
Lewis, F. J.	Research	27
Lewis, J. H.	do	83
Lewis, M. L.	Fellowship	175
Lewis, N.	do	162
Lhotka, J. F., Jr.	Research	76
Lichtenberger, E.	do	102
Lichton, I. J.	do	13
Liddle, H. V.	do	84
Liebow, A. A.	do	16
	Training	126
Likoff, W.	Research	78
	Training	146
Lilienfeld, A. M.	do	133
Lilienfield, L.	Research	17
Lillehei, R. C.	do	48
Lillehei, W.	do	48
Linberg, E. I.	do	36
Linde, L. M.	do	5, 7
Lindgren, I.	do	42
Linker, A.	do	91
Linn, H.	Fellowship	166
Linton, R. R.	Research	39
Lionetti, F. J.	Research	38
	Fellowship	185
Lippschutz, E. J.	Research	59
Lipsky, S. R.	do	16
Liptak, T. E.	Fellowship	165
Lis, E. W.	do	161
Lisan, P.	Research	78
Littlefield, J. B.	do	92
Litwak, R. S.	do	19
Litwin, S. B.	Fellowship	169
Lock, R.	Research	70
Lockwood, W. R.	Fellowship	172
Loehing, R. W.	Research	91
Lowey, A. G.	do	77
Lofland, H. B.	do	71
London, I. M.	do	67
	Training	142
Long, D. M., Jr.	Fellowship	172
Longcope, C.	do	182
Longerbeam, J.	do	172
Longmire, W. P.	Research	7
Longmore, W. J.	Fellowship	162
Lorand, L.	Research	27
Lord, J. W.	do	66
Loring, H. S.	do	13
Loring, W. E.	do	62
Love, W. D.	do	33
Low, F. N.	do	32
Lower, R. R.	Fellowship	163
Lowman, J. T.	do	172
Lowman, R. M.	Research	16
Lown, B.	do	42
Loyke, H. F.	do	73
Lucchesi, B.	do	45
Luchi, R. J.	do	81
Luchsinger, P. C.	do	17
	Training	127
Luckey, E. H.	Research	63
Luessenhop, A.	do	17
Luetscher, J. A.	do	13
Luisada, A. A.	do	23
	Training	129

GRANTEE INDEX—Continued

		Page
Lukas, D. S.	Training	141
	Research	63
Lum, B. K.	do	30
Lundberg, W. O.	do	47, 48
Lupton, C. H., Jr.	do	3
Luria, M. N.	Fellowship	177
Lurie, A. A.	Research	40
Lurie, P. R.	do	28
Lutz, B. R.	do	38
Lyle, R. E., Jr.	do	54
Lynch, P. R.	do	82
Lynn, W. S.	do	70
	Fellowship	184
Lyons, C.	Research	3
Lyons, H. A.	do	57
Lyons, R. H.	Training	139, 140
MacLeod, C. M.	do	142
MacDonald, R. A.	Research	38
Macey, R. I.	do	5
Mackler, B.	do	94
MacLean, L. D.	do	49
MacPherson, W. E.	Training	123
Magovern, G. J.	Research	83
Mahaffey, J. E.	do	85
Mahoney, E. B.	do	68
Majno, G.	do	42
Mallett, D. L.	Fellowship	178
Malm, J. R.	Research	62
Maloney, J. V., Jr.	Training	124
Manchester, B.	Research	19
Mandelbaum, I.	Fellowship	167
Manfredi, F.	Research	28
Mangiardi, J. L.	do	61
Mann, D. E.	do	82
Mann, G. V.	do	87
Manning, J. W.	Fellowship	165
Marchetti, A. A.	Research	17
Marcus, F. I.	do	17
Marinetti, G. V.	do	68
Markowitz, M.	do	37
Marks, A.	do	19
Marmorston, J.	do	9
Maroney, S. P.	Research	92
Marriott, H. J.	do	36
Marsh, D. J.	Fellowship	188
Marsh, J. B.	Research	81
Marsh, W. H.	do	57
Marshall, J. M.	do	42
Martell, A. E.	do	25, 44
Martin, A. W.	do	94
Martin, C. J.	do	93
Martin, H. B.	do	42
Martin, H. E.	do	9
Martin, R.	Training	132
Martinek, J.	Research	19
Martinez, A.	do	102
Marx, W.	do	9
Mary Alma, Sister	do	34
Mason, D.	do	78
Mason, H. L.	do	49
Mason, S. G.	do	101
Masouredis, S. P.	do	11
Massell, B. F.	do	38
Masters, E. M.	Fellowship	180
Matloff, J. M.	do	170
Matoth, Y.	Research	104
Mattenheimer, H.	do	26
Mattingly, C. B.	Training	126
Mautner, W.	Research	64
Maxwell, G. M.	do	99
Maxwell, M. H.	do	7
Mayer, S. E.	do	21
Mayerson, H. S.	do	33
McAllister, F. F.	do	62
McBeth, C. H.	do	37
McBroom, F.	do	8
McCarty, M.	do	66
McCawley, E. L.	do	77
McCay, C. M.	do	61
McCollester, D. L.	Fellowship	187
McCrory, W. W.	Research	29
McCuistion, A. C.	Fellowship	181
McCusker, H.	Training	147
McDonald, D. F.	Research	68
McElfresh, A. E.	do	82
McFee, R.	Research	68
McGaughey, H. S.	do	92
McGeer, P. L.	do	101
McGill, H. C.	do	16, 18, 32
	Training	132
McGuire, J.	do	144
McIntyre, W.	Research	53
McIsaac, R. J.	do	59
McIver, F. A.	do	85
McKain, J. M.	do	53
McKay, D. G.	do	62
McKee, A. P.	do	29
McKeever, W.	do	27
McKusick, V. A.	do	35
	Training	133
McLean, C. E.	do	126
McManus, J. F. A.	Research	3
Medearis, D. N.	do	35
Mehrizi, A.	Fellowship	168
Meister, A.	Research	40
Mel, H. C.	Fellowship	161
Meltzer, L. E.	Research	82
Mendlowitz, M.	do	64
Meng, H. C.	do	87
Meredith, J. H.	do	71
	Fellowship	178
Merendino, K. A.	Training	151
	Research	94
Merklin, R.	do	79
Merrill, J. P.	do	42
Merskey, C.	do	67
Meschan, I.	do	71
Metcalfe, J.	Training	145
Meyer, J. S.	Research	46
Meyer, R. K.	do	97
Meyers, F. H.	do	11
Miale, J. B.	do	19
Michael, A. F.	Fellowship	172
Michael, M., Jr.	Training	128
Michaelson, I. A.	Fellowship	169, 187
Michels, N. A.	Research	79
Miller, A. J.	do	25
Miller, B. F.	do	72

GRANTEE INDEX—Continued

		Page
Miller, D	Research	51
Miller, D. R	do	30
Miller, H. D	Fellowship	172
Miller, J. A	Research	33
Miller, O. N	do	33
Miller, R. B	Fellowship	169
Miller, S. P	Research	59
Miller, W. F	do	89
Mills, G. C	do	89
Mills, L. C	do	79
Milstone, J. H	do	16
Mitchel, B. F	do	89
Mithoefer, J. C	do	60
Mizeres, N. J	do	46
Mizgala, H. F	Fellowship	175
Moffitt, H. C., Jr	Training	124
Mogabgab, W. J	Research	33
Mohn, J. F	do	59
Mommaerts, W	do	70
Monroe, R. G	do	38
Moon, H. D	do	11
Moon, J. H	do	93
Moore, C. V	do	52
Moore, E. N	Fellowship	174
Moore, F. D	Training	135
Moore, J. C	Research	31
Moorjankowski, J	Fellowship	187
Morales, M. F	Research	11
Moran, N. C	do	22
Moran, T. J	do	84
Moran, W. H., Jr	Fellowship	183
Morch, E. T	Research	25
Morehouse, M. G	do	9
Morell, S. A	do	98
Morgan, B	Training	150
Morgan, R. H	Research	35
	Training	133
Morkin, E	Fellowship	175
Morris, A. J	do	167
Morris, J. D	Research	45
Morris, L. E	do	93
Morris, R. C., Jr	Fellowship	175
Morris, W. H. M	Research	28
Morrison, R. S	Research	42
Morse, R. L	Fellowship	170
Mortensen, J. D	Research	91
Moseley, R. D	do	24
Moser, M	do	68
Moses, C	do	83
Mosley, K. T	Training	145
Moss, A. J	do	124
Mossman, H. W	Research	97
Mostellar, M. E	Fellowship	165
Motulsky, A. G	Research	94
Movat, H. Z	do	101
Mudge, G. H	do	35
Muehrcke, R. C	do	26
Muelheims, G	Fellowship	173
Mueller, J. F	Research	72
Muelling, R. J	do	31, 32
Muirhead, E. E	do	46
Mulder, D. G	do	7
Muller, W. H., Jr	Training	150
	Research	92
Muntwyler, E	do	57
Murphy, F	do	86
Murphy, C. N	Fellowship	164
Murphy, G. E	Research	63
Murphy, Q. R	do	97
	Training	152
Murphy, W. P	Research	19
Murray, J. F	do	7
Murray, J. E	do	42
Murray, M	do	31
Murray, R. G	do	28
Mustard, J. F	do	100
Myers, J. D	Training	147
Nachlas, M. M	Research	37
Nachmansohn, D	do	62
Nadas, A. S	Training	134
Nahas, G. G	Research	62
Nahm, H	Training	125
Nash, C. B	Research	86
Nelson, C. V	do	34
Nelson, G. J	Fellowship	161
Nelson, K. R	Training	141
Nelson, R. M	Research	91
Nelson, T. E., Jr	do	98
Nelson, W. P	Training	140
Nemir, P., Jr	Research	81
Netshy, M. G	do	70, 71
Nettles, J. B	do	4
Neve, R. A	do	94
Nevins, R. G	do	30
Newburgh, R. W	do	76
Newcomb, T. F	do	20
Newman, E. V	do	87
	Training	149
Newman, M. M	Research	15
Nice, C. M., Jr	Training	132
Nicholas, K. R	Fellowship	181
Nichols, H. T	Research	79
Nickerson, J. L	do	23
Niles, N. R	do	77
Nite, G	do	51
Noda, L	do	54
Noehren, T. H	do	59
Nonkin, P. M	Fellowship	165
Norman, J. R	do	170
Norman, P. S	Research	35
Norman, T. D	do	4, 33
Norris, R. F	do	81
Novack, P	do	79
Novoa, W. B	Fellowship	182
Noyes, W. D	Research	20
Nye, R. E	do	54
Nye, W. H	Fellowship	177
Nylin, G	Research	108
O'Loughlin, B	Fellowship	188
O'Meallie, L. P	do	168
O'Neal, R. M	Research	52
O'Reilly, R. A	Fellowship	163
O'Brien, G. F	Training	129
O'Brien, J. S	Fellowship	161
Obrink, K. J	Research	108
Odum, E. P	do	21
Oester, Y. T	do	25

GRANTEE INDEX—Continued

		Page
Ogden, E	Training	144
	Research	74
Ogilvie, J. W., Jr	----do	35
Ogura, J. H	----do	52
Ohler, E. A	----do	82
Okey, R	----do	5
Okita, G. T	----do	24
Olichney, M. J	Fellowship	182
Oliver, C. P	Research	88
Oliver, G. J	----do	98
Oliver, J	----do	56
Olson, R. E	----do	83
	Training	147
Olwin, J. H	Research	26
Omachi, A	----do	25
Oncley, J. L	----do	42
Opdyke, D. F	----do	55
Oppenheimer, M. J	----do	82
	Training	146
Orkin, L. R	Research	67
Orsini, M. W	----do	97
Ortiz, A	----do	98
Orvis, H. H	----do	17
Osborn, J. J	----do	106
Owen, R. D	----do	10
Ozoa, A. K	Fellowship	166
Pace, N	Research	5
Paes, De C	----do	100
Paff, G. H	----do	19
Pagano, V. V	----do	65
Page, E	----do	42
Page, I. H	----do	73
	Training	144
Page, L. B	Research	39
Pakrashi, S. C	----do	103
Palade, G. E	----do	66
Paladini, A	----do	99
Paley, H. W	----do	12
Pallini, C. A	Fellowship	174
Palmer, K. H	Research	100
Papper, E. M	----do	62
Papper, S	Research	93
Paradise, R. R	Fellowship	162
Pareira, M. D	Research	51
Parker, B. M	----do	52
Parker, E. F	----do	85
Parker, F	Fellowship	182
Parker, R. H	----do	181
Parrish, A. E	Research	17
Parrott, R. H	----do	17
Parsons, W. B	----do	96
Pate, J. W	----do	86
Patek, P. R	----do	9
Paterson, J. C	Training	132
Patt, D. I	Fellowship	185
Patterson, J. L	Research	93
Patterson, R. A	----do	3
Patterson, W. R	Training	129
Patton, S	Research	84
Paul, O	----do	26
Paule, W. J	----do	9
Pauling, L	----do	10
Payne, R	----do	13
Pearl, F. L	----do	12
Pearl, M. A	Fellowship	168
Pearl, W	----do	176
Pearson, R. B	Research	6
Pease, D. C	----do	7
Peden, J. C., Jr	Fellowship	188
Peirce, E. C	Research	86
Pellett, J. R	Fellowship	183
Peltier, L. F	Research	30
Penna, M	Fellowship	179
Penneys, R	Research	81
Pennialli, R	----do	69
Pentz, E. I	----do	26
Perra, G. A	----do	62
Perkins, H. A	----do	12
Perkins, J. F., Jr	----do	24
Perkins, R	----do	3
Perlmutt, J. H	----do	69
Perlmutter, M	----do	59
Perloff, J. K	Fellowship	165
Permutt, S	Research	15
Perry, H. M	Research	52
Persky, L	----do	73
Peschel, E	----do	70
Peskin, G. W	----do	81
Peters, L	----do	30
Peters, R. M	----do	69
Peters, T., Jr	----do	60
Petersen, M. J	Fellowship	163
Peterson, J. C	Research	97
Peterson, J. E	Fellowship	170
Peterson, L. H	Research	81
Peterson, R. E	----do	29
Petz, L. D	Fellowship	187
Phillips, G. B	Research	62
Phillips, L. L	----do	62
Pick, R	----do	25
Pickard, S. D	Fellowship	166
Pickering, D. F	Research	76
Pilgeram, L	----do	49
Piliero, S. J	----do	65
Pincus, G	----do	43
Pinto, D. W	Fellowship	163
Pipberger, H. V	Research	17
Pirkle, H. C	----do	31
Pitts, R. F	----do	63
	Training	141
Plager, J. E	Fellowship	177
Plaut, G. W. E	Research	91
Polgar, G	Fellowship	179
Pollack, O. J	Research	16
Pollak, V. E	----do	25
Pomaleslebron, A	----do	98
Ponder, E. H	----do	61
Pool, J. G	----do	13
Popper, R. W	Fellowship	163
Porter, R. R	Training	151
Portman, O. W	Research	42
Post, R. L	----do	87
Post, R. S	----do	74
Postlethwait, R	----do	70
Potter, C. S	Fellowship	172
Potter, E. L	Training	129
Powers, S. R	Research	58

GRANTEE INDEX—Continued

		Page
Prager, M. D	Research	88
Pratthomas, H	do	85
Prec, K. J	do	24
Pressman, D	do	60
Price, H. L	Fellowship	163
	Research	81
Prichard, R. W	do	71
Prinzmetal, M	do	8
Pritchard, J. A	do	89
Pritchard, W. H	Training	144
Privett, O. S	Research	48
Proger, S	Training	134
	Research	40
Pruitt, R. D	do	90
Prystowsky, H	do	20
Pudenz, R. H	do	11
Pullman, T. N	do	24
Putnam, F. W	do	20
Quick, A. J	do	97
Quilligan, J. J	do	8
Quinn, R. W	do	87
Raab, W	do	91
Rabinowitz, L	Fellowship	169
Rabinowitz, M	Research	24
	Training	129
Raccuglia, G	Research	45
Race, G. J	do	88
Rachmilewitz, M	do	104
Rackley, C. E	Fellowship	182
Raffucci, F	Research	98, 99
Rall, T. W	Fellowship	182
Rammelkamp, C	Research	74
Ramsey, L. H	do	87
Ramsey, R. W	do	93
Rand, E	Fellowship	174
Rand, P. W	do	168
Randall, J. E	Research	50
Randall, W. C	do	25
Randolph, W. A	Fellowship	181
Rankin, J	Research	97
Rantz, L. A	do	13
Rapaport, E	Research	11
Rapaport, S. I	do	9
Rappaport, H. R	Fellowship	176
Rasch, C. A	do	178
Rashkind, W. J	Research	78
Rasmussen, P	do	30
Ratcliffe, H	do	82
Rath, C. E	do	18
Ratnoff, O. D	do	74
Ravitch, M. M	do	34
Ray, C. T	Training	137
Read, R. C	Research	48
Read, W. O	do	85
	Training	148
Redding, J. S	Research	34
Redo, S. F	do	63
Reed, W. A	do	30
Reemtsma, K	do	33
Reeve, E. B	do	14
Reeves, R. B	Fellowship	175
Reeves, T. J	Research	3
Reid, D. D	do	109
Reiff, T. R	do	6
Reilly, E. B	do	9
Reiner, L	do	67
Reiser, R	do	88
Reiss, O. K	do	14
Reissmann, K. R	do	30
Relman, A. S	do	39
Remington, J. W	do	22
Rempel, W. E	do	48
Renzetti, A. D	do	35
Reporter, M	Fellowship	169
Revell, S. T	Training	133
Reynolds, M	Research	81
Reynolds, R. N	do	37
Reynolds, S. R	Training	129
Reynolds, T. B	Research	9
Rheinlander, H	do	40
Rhode, E. A	do	5
Richards, L. S., Jr	Fellowship	172
Richardson, A	Training	128
Richardson, J. A	Research	85
Richardson, J. W	Fellowship	177
Richardson, T. Q	do	172
Riley, R. L	Research	35
	Training	133
Ring, B. A	Research	92
Ring, G. C	do	19
	Training	127
Riopelle, A. J	Research	20
Ristic, M	do	27
Ritterband, A	do	62
Ritvo, M	do	40
Rivkin, L. M	do	12
Robb, J. S	do	54
Robbins, K. C	do	26
Robbins, R. C	do	20
Robbins, S. L	do	38
Roberts, B	do	81
Roberts, C. M	do	9
Roberts, D. G	do	91
Roberts, J. C., Jr	do	14
Roberts, J	do	63
Roberts, K. E	do	12
Roberts, P. S	do	93
Robin, E. D	do	83
Robinson, R. W	do	44
Rockstein, M	do	66
Rodbard, S	do	59
	Training	140
Rodriguez, M. I	Research	103
Roe, B. B	do	11
Rogers, J. B	do	31
Rogers, L. S	do	57
Rogoff, J. B	do	59
Rojas, V. F	do	102
Roldan, P. N	Fellowship	178
Roll, P. M	Research	97
Romney, S. L	do	67
	Training	142
Roos, A	Research	52
Root, W. S	do	63
Roque, A. L	do	57
Rose, A	do	84
Rose, H. G	Fellowship	169

GRANTEE INDEX—Continued

		Page
Rose, J. C	Research	18
Rosemberg, E	do	43
Rosenberg, N	do	55
Rosenblum, I	do	58
Rosenblum, R	do	58
Rosenfeld, S	do	8
Rosenfield, R. E	do	64
Rosenman, R. H	do	12
Rosenthal, R. L	do	62
Ross, B. B	do	77
Ross, R. S	do	35
Ross, S. W	do	4
Rostorfer, H	do	28
Roth, K. L	do	78
Rothschild, P	Fellowship	162
Roveti, G. C	Research	35
Rowen, R	do	67
Rowley, D. A	do	24
Royo, R. M	Training	152
Rubenstein, E	Research	13
Rubin, A. L	do	63
Ruch, T. C	do	95
Rudolph, A. M	do	67
	Training	142
Rushmer, R. F	Research	95
	Training	151
Rusk, H. A	Research	66
Russell, F	do	8
Russell, R. P	Fellowship	168
Rutstein, D. D	Research	42
	Training	135
Rytand, D. A	do	125
Sabiston, D. C	Research	36
Sachs, B. A	do	58
Said, S. I	do	93
Salazar, A. E	Fellowship	180
Salisbury, P. F	Research	5
Sallman, B	do	19
Salmon, P. A	Fellowship	172
Salmon, W. D	Research	3
Salvidio, E	do	105
Samet, P	do	20
Samuels, P. B	Research	9
Sancetta, S. M	do	74
Sandberg, H	do	81
Sandler, H	Fellowship	183
Saphir, O	Research	26
Sapirstein, L. A	do	74
Satinsky, V. P	do	79
Saunders, D. E	Fellowship	187
Saunders, P. R	Research	9
Sautter, J. H	do	48
Sawitsky, A	do	61
Sawyer, P. N	do	57
Sayen, J. J	do	81
	Training	146
Sayers, G	do	144
Scatchard, G	Research	43
Scatliff, J. H	do	16
Schaefer, L. E	do	64
Schapiro, S	do	8, 10
Schenk, E. A	do	68
Schenk, W	do	59
Scher, A. M	do	95
Scheraga, H. A	do	61
Scherf, D	do	65
Scherlis, L	Training	133
Schiebler, G. L	Research	20
Schieve, J. F	do	74
Schiff, E. G	do	19
Schilling, R. F	do	97
Schlant, R. C	do	22
Schlegel, J. U	do	33
Schlenk, H	do	48
Schlesinger, B	do	64
Schloerb, P. R	do	30
Schmid, H. E., Jr	do	71
Schmidt, G	do	37
Schmidt-Nielsen, K	Training	143
	Research	70
Schmitt, O. H	do	48
Schneider, C	do	46
Schneiderman, H. A	do	74
Schneiderman, H	do	61
Schneiderman, L. J	Fellowship	187
Schopp, R. T	Research	14
Schramel, R. J	do	33
Schreiber, S. S	do	66
Schreiner, G. E	Training	127
Schrier, S. L	Research	13
Schroeder, H. A	do	54
Schroeder, W. A	do	10
Schuder, J. C	do	50
Schull, L. G	do	87
Schuman, L. M	Training	136
Schwan, H. P	Research	81
Schwartz, M. J	Fellowship	185
Schwartz, W. B	Research	39
	Training	134
Schweet, R. S	Research	30, 31
Scott-Blair, G. W	do	110
Scott, H. W., Jr	do	87
Scott, J. C	do	79
Scott, J. L	do	16
Scott, R. F	do	58
Scribner, B. H	do	95
Seager, L. D	do	4
Sealy, W. C	do	70
	Training	143
Seaman, A. J	Research	76
Sebrell, W. H., Jr	Training	140
Seegal, B. C	Research	63
Seegers, W. H	do	46
Sekul, A. A	Fellowship	172
Seldin, D. W	Training	149
Selkurt, E. E	Research	28
Sellers, A. L	do	8
Selye, H	do	101
Selzer, A	do	12
Seronde, J	do	43
Setala, K. M. E	do	103
Severinghaus, J	do	11
Sevy, R. W	Training	146
	Research	82
Sgouris, J. T	do	46
Shapiro, A. P	do	83
	Training	147
Shapiro, S	Research	64

GRANTEE INDEX—Continued

		Page
Shapiro, S. S	Fellowship	171
Shapiro, W	do	182
Share, L	Research	74
Sharp, J. T	do	25
Shaw, R. F	do	92
Sheffield, L. T	Fellowship	161
Shepard, R. B	Research	3
Shepard, W. P	do	64
	Training	141
Shepherd, J. T	Research	49
Sheppard, C. W	do	86
Sherrod, T. R	do	25
Sherry, S	do	52
Shideler, A. M	do	75
Shideman, F. E	do	97
Shillito, J., Jr	do	42
Shimamoto, T	do	105
Shimomura, S	Fellowship	175
Shinowara, G. Y	Research	66
Shkolnik S	Fellowship	162
Shoemaker, W	Research	26
Shore, B	do	52
Shubeck, F	do	76
Shulman, S	do	60
Shumacker, H. B	do	28
	Training	130
Shumway, N. E	Research	13
Sichel, F. J. M	do	92
Siebecker, K. L	do	97
Siebens, A. A	do	97
Siegal, A. C	do	27
Siegal, M	do	54
Sieracki, J. C	do	77
Sigler, M. H	Fellowship	179
Silver, E. N	Research	26
Simeone, F. A	do	74
Simmons, D. H	do	7
Simms, H. S	do	63
Simonson, E	do	48
Simpson, C. F	do	20
Singer, T. P	do	45
Sipple, J. H., Jr	Fellowship	168
Sirak, H. D	Research	74, 75
Sirota, J. H	Research	10
Sise, H. S	do	40
	Training	135
Skelton, F. R	Research	32
Slade, H. D	do	27
Slobody, L. B	do	65
Slotta, K. H	do	19
Sloviter, H. A	do	81
Smith, A. G	do	4
Smith, A. H	do	5
Smith, C. R	do	75
Smith, D. H	do	55
Smith, D. J	do	92
Smith, H. W	do	66
Smith, J. J	Training	152
Smith J. R	Research	52
	Training	138
Smith, J. W	Research	63
Smith, L. L	do	8
Smith, O. A., Jr	do	95
Smith, P. W	do	76
Smith, W. M	do	68
Smythe, C. M	do	85
Snavely, J. R	Training	137
Snegireff, L. S	do	135
Sobin, S. S	Research	8
	Fellowship	162
Sodeman, W. A	Training	146
Soffer, A	Research	68
Sokolow, M	do	11
	Training	125
Solomon, R. D	Research	6
Solomon, S	do	93
Somoza, C	do	72
Sonnenschein, R	do	7
Spaet, T. H	do	58
Spain, D. M	do	59
Spargo, B. H	do	24
Spear, G. S	do	36
Speirs, R. S	do	57
Spellman, M	do	18
Spencer, M. P	do	71
Sperelakis, N	do	74
Spicer, W. S	Research	36
	Fellowship	168
Spiro, D	Research	63
Spittel, J. A., Jr	do	49
Spitzer, J. J	do	79
Sporn, I. N	Fellowship	182
Spuhler, J. N	Research	45
Spurr, G. B	do	86
Srere, P. A	do	45
Staba, E	do	53
Stacy, R. W	do	75
Stahlman, M. T	do	87, 88
Stall, B. G	do	86
Stallones, R. A	Training	123
Stamey, T. A	Research	13, 34
Stamler, J	do	23
Stapleton, J. F	Training	135
Stare, F. J	Research	42
	Training	135
Starr, I	Research	81
Starr, P	do	9
State, D	do	67
Stead, E. A., Jr	do	70
	Training	143
Stead, W. W	Research	97
	Training	152
Steblay, R. W	Research	24
Steele, J. M	do	66
Stefanini, M	do	40
	Training	135
Stein, A. H., Jr	Research	52
Stein, M	do	42
Stein, Y	do	104
Steinberg, A. G	do	74
Steinberg, M. S	Training	137
Steinmetz, G. P	Fellowship	183
Steinmetz, P. R	do	176
Stephenson, S. E	Research	88
Stevenson, T. D	do	31
Stewart, J. D	do	60
Stier, T. J	do	28
Stivala, S	do	54
Stock, A. H	do	83

GRANTEE INDEX—Continued

		Page
Stock, T. B	Fellowship	171
Stollerman, G. H	Research	26
Stone, H. L	Fellowship	172
Storer, J. B	Research	34
Storey, W. F	Fellowship	163
Stotz, E. H	Research	68
Stow, R. W	do	75
Strang, R. C	Fellowship	170
Strickler, J. C	do	175
Strittmatter, P	Research	52
Strong, L. H	do	24
Strong, L. C	do	60
Strong, W. B	Training	131
Strumia, M. M	Research	77
Strumia, P. V	do	77
Stuckey, J. H	do	57
Sturgeon, P	do	8
Sturke, P. D	do	55
Stutman, L. J	Fellowship	176
Sudak, F. N	Research	67
Sullivan, L	do	17
Sullivan, S	Fellowship	175
Sundberg, R. D	Research	48
Surawicz, B	do	92
Sutherland, E. W., Jr	Training	144
	Research	74
Sutherland, G. B	do	101
Swain, H. H	do	45
Swaine, C. R	do	82
Swan, H. J	do	49
Swan, H	do	14
	Training	125
Swank, R. L	Research	77
Swann, H. G	do	89
Swartwout, J. R	do	84
Sweeney, R	do	80
Sweet, H. C	do	51
Sweet, W. H	do	39
Swenson, M. J	do	29
Swenson, O	do	26
Swigart R. H	do	31
Szentgyorgyi, A	do	44
Tabakin, B. S	Training	150
	Research	92
Tager, M	do	22
Talbot, N. B	Training	134
	Research	42
Talbot, S. A	do	36
Talner, N. S	do	16
Tanz, R. D	do	74
Tarnay, T. J	do	96
Tatum, H. J	do	77
Taussig, H. B	Training	133
Taylor, A. N	Fellowship	178
Taylor, H. L	Research	48
Taylor, J. S	Training	123
Taylor, P. M	Research	83
Taylor, W. J	do	20
	Training	127
Tchen, T. T	Research	46
Teabeaut, J. R	do	22
Tejada, C	do	18
Templeton, J. Y	do	79
Tenney, S. M	do	54
	Training	139
Teodoru, C. V	Research	59
Tepperman, J	do	57
Ter Pogossian, M. M	do	52
Terner, C	do	38
Tetirick, J. E	do	74
Texon, M	do	66
Thal, A. P	do	48
Thatcher, L. G	Fellowship	181
Theye, R. A	Research	49
Thienes, C. H	do	11
Thilenius, O. G	Fellowship	166
Thomas, C. B	Research	36
Thomas, H. D	do	3
Thomas, J	do	87
	Training	148
Thomas, L. J	Research	9
Thomas, W. A	do	58
Thompson, D. D	do	63
Thompson, W	do	18
Thonnard, E	do	21
Thorsen, H. G	Research	108
Thorson, T. B	do	53
Threefoot, S. A	do	33
Thrower, W. B	do	85
Tichy, J. R	do	34
Tidball, M. E	Fellowship	169
Tilley, R. M	Training	137
Timmis, H. H	Research	181
Tishkoff, G. H	do	7
Tobian, L	do	48
Tobin, C. E	do	68
Tocantins, L. M	do	79
Todd, D	do	43
Tolman, R. A	do	32
Tosteson, D. C	do	52
Towery, B. T	Training	131
Travis, R. H	Research	74
Treadwell, C. R	do	17
Trepacz, E. J	Fellowship	177
Troum, L	do	174
Troup, S. B	Research	68
Truex, R. C	do	79
Tsaltas, T. T	do	79
Tsuboi, K. K	do	13
Tsuji, H. K	Fellowship	162
Tu, W. H	Research	95
Tuckman, J	Fellowship	187
Tullis, I. F	Training	148
Turner, D. A	Research	37
	Training	133
Turner, T. B	Research	36
Tuttle, A. H	do	86
Tuttle, E. P., Jr	do	22
Tyler, J. M	Training	135
Tyler, W. S	Research	5
Ussing, H. H	do	102
Uvnas, B	do	108
Vadney, R. C	Fellowship	165
Valentine, W	Research	7
Valk, W. L	do	30
Vallee, B. L	do	42

GRANTEE INDEX—Continued

		Page
Valtin, H	Research	54
Van Bogaert, A	do	99
Van Buchem, F	do	106
Vanamee, P	do	64
Vanatta, J. C	do	89
Vanbergen, F	do	48
Vance, J. W	do	60
Vanderlinde, R. E	do	57
VanDyke, H. B	do	63
Velick, S. F	do	52
Venning, E. H	do	101
Vick, R. L	do	57, 90
Vidaver, G. A	Fellowship	167
Vinograd, J	Research	10
Visscher, M. B	do	48
	Training	136
Vitale, J. J	Research	42
Vogel, J. K	Fellowship	164
Von Kaulla, K. N	Research	14
Vonkorff, R	do	48
Wachstein, M	do	55
Waddell, W. R	do	42
Wagner, B. M	do	65
Wagner, C	Fellowship	169
Wagner, M	Research	97
Wagner, R	do	40
Wagoner, K. S	do	28
Waibel, P. E	do	49
Wainwright, J	do	109
Walaszek, E. J	do	30
Waldstein, S	do	27
Walker, A. R	do	109
Walker, C. H	do	14
Walker, J. H	Fellowship	175
Walker, S. M	Research	32
Walker, W. G	do	36
Wallace, J. M	do	70
Walsh, J. B	do	63
Walton, R. P	Training	148
	Research	85
Wangensteen, O. H	do	48
	Training	136
Wangensteen, S. L	Research	63
Wannamaker, L. W	do	48
Warden, H. E	do	96
Waring, W. W	do	33
Warner, H. R	do	91
Warner, H. F	Fellowship	179
Warner, N. E	Research	24
Warnhoff, E. W	do	9
Warren, J. V	Training	144, 149
	Research	75
Warren, R	Research	42
	Training	135
Warren, W. D	Research	92
Wartman, W. B	do	26
Waters, L. L	do	16
Watkins, D. H	do	14
Watkins, E	do	38
Watson, D. W	Training	137
Watson, J. F	Fellowship	169
Watson, K. A	do	161
Watson, R	Research	63
Watts, D. T	do	96
Watts, G. T	do	109
Waugh, W. H	do	31
Webb, G. N	do	36
Webb, J. L	do	9
Webb, R. L	do	28
Webb, W. R	do	50
Wechsler, B. M	Fellowship	174
Wedum, B. G	Research	19
Weed, R. I	do	68
Weens, H. S	Training	128
Wegria, R	Research	51
	Training	138
Weichselbaum, T	Research	52
Weil, M. H	do	9
Weinberg, S. R	do	57
Weinberg, T	do	37
Weiner, M	do	65
Weirich, W. L	do	11
Weisberger, A	do	74
Weisman, R., Jr	do	74
Weiss, A. K	do	19
Weiss, A. J	Research	79
Weiss, G. B	Fellowship	180
Weiss, H. S	Research	55
Weissler, A. M	do	89
	Fellowship	178
Wells, W. W	Research	84
Welt, I. D	do	18, 64
Welt, L. G	do	69
Welzant, W. R	Fellowship	170
Wendt, V. E	do	171
Wertheim, A. R	Research	63
Werthessen, N. T	do	90
Wesolowski, S	do	57
Wessler, S	do	42
Wesson, L. G	do	65, 66
	Fellowship	176
West, T. C	Research	95
Westcott, J. L	Fellowship	175
Wexler, B. C	Research	72
Wexler, J	do	37
Whalen, R. E	Fellowship	177
Whalen, W. J	Research	29
Wheeler, J. T	Fellowship	168
Whipple, G. H	Research	39
Whistler, R. L	do	28
White, A	do	67
	Training	142
White, P. D	Research	44
Whitehorn, W	do	25
Whitehouse, M	do	109
Wiebers, J. E	do	28
Wiedeman, M. P	do	82
Wiggers, H. C	Training	140
Wilcox, P. E	Research	95
Wilcox, W. C	Fellowship	181
Wilder R. J	Research	34
Wilens, S. L	do	66
Wilkins, R. W	Training	134
	Research	39
Wilkinson, R. S	Fellowship	177
Willard, W. R	Training	131
Willenkin, R. L	Fellowship	164
Williams, G. R	Research	76

GRANTEE INDEX—Continued

		Page
Williams, M. H	do	67
	Training	142
Williams, R. D	Research	74
Williams, W. L	do	50
Willis, J. S	Fellowship	188
Willson, J. T	Research	14
Wilson, H. E., 3d	do	89
Wilson, J. L	do	45
Wilson, J. L	do	106
Wilson, R. J	Fellowship	180
Wilson, R. H	Research	89
Wilson, W. S	do	45
Winegrad, S	Fellowship	187
Winer, B. M	Research	42
Winkelstein, W	do	60
Wissig, S. L	do	11
Wissler, R. W	do	24
Witebsky, E	Training	140
Witham, A. C	do	128
Wittenberg, J. B	Research	67
Woerdeman, M. W	do	106
Woerner, T. E	Fellowship	169
Wolbach, R. A	do	184
Wolf, G	Research	27
Wolf, S	do	75, 76
	Training	145
Wolfe, R. G., Jr	Research	76
Wong, H. Y. C	Research	18
Wood, C	do	36
Wood, Earl H	do	49
Wood, Ernest H	do	69
Wood, J. E	do	22
	Training	128
Wood, J. E., Jr	do	150
Woodbury, J. W	Research	95
Woodhall, B	do	70
Woods, J. W	do	69
Woodward, R. B	do	42
Worthen, H. G	do	48
Wosilatt, W. D	do	57
Wright, I	do	69
Wright, I. S	do	63
	Training	141
Wright, L. D	Research	61
Wycoff, H. D	do	22
Wylie, C. M	do	36
Wylie, E. J	do	5
Yang, W. C	do	10
Yanof, H. M	do	26
Yokoyama, H. O	do	27
Yonce, L. R	do	69
Youmans, W. B	Fellowship	183
Young, A. C	Training	151
Young, L. E	do	142
Young, R. C., Jr	Fellowship	163
Yu, P. N	Research	68
Yudilevich, D. L	do	102
Yurchak, P. M	Fellowship	170
Zalter, R	Research	24
Zalusky, R	Fellowship	170
Zanger, L. C	do	163
Zankel, H. T	Research	70
Zao, Z. Z	Fellowship	165
Zatzman, M. L	Research	50
Zekert, H	Fellowship	173
Zilversmit, D. B	Training	149
	Research	86
Zinkham, W. H	do	36
Ziskind, M. M	do	33
Zoll, P. M	do	37, 42
Zorbach, W. W	do	18
Zugibe, F. T	do	84
Zweifach, B	do	66
Zweifllr, A. J	Fellowship	171

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(THIS MAP DOES NOT INCLUDE COMMUNITY PROGRAM AWARDS)

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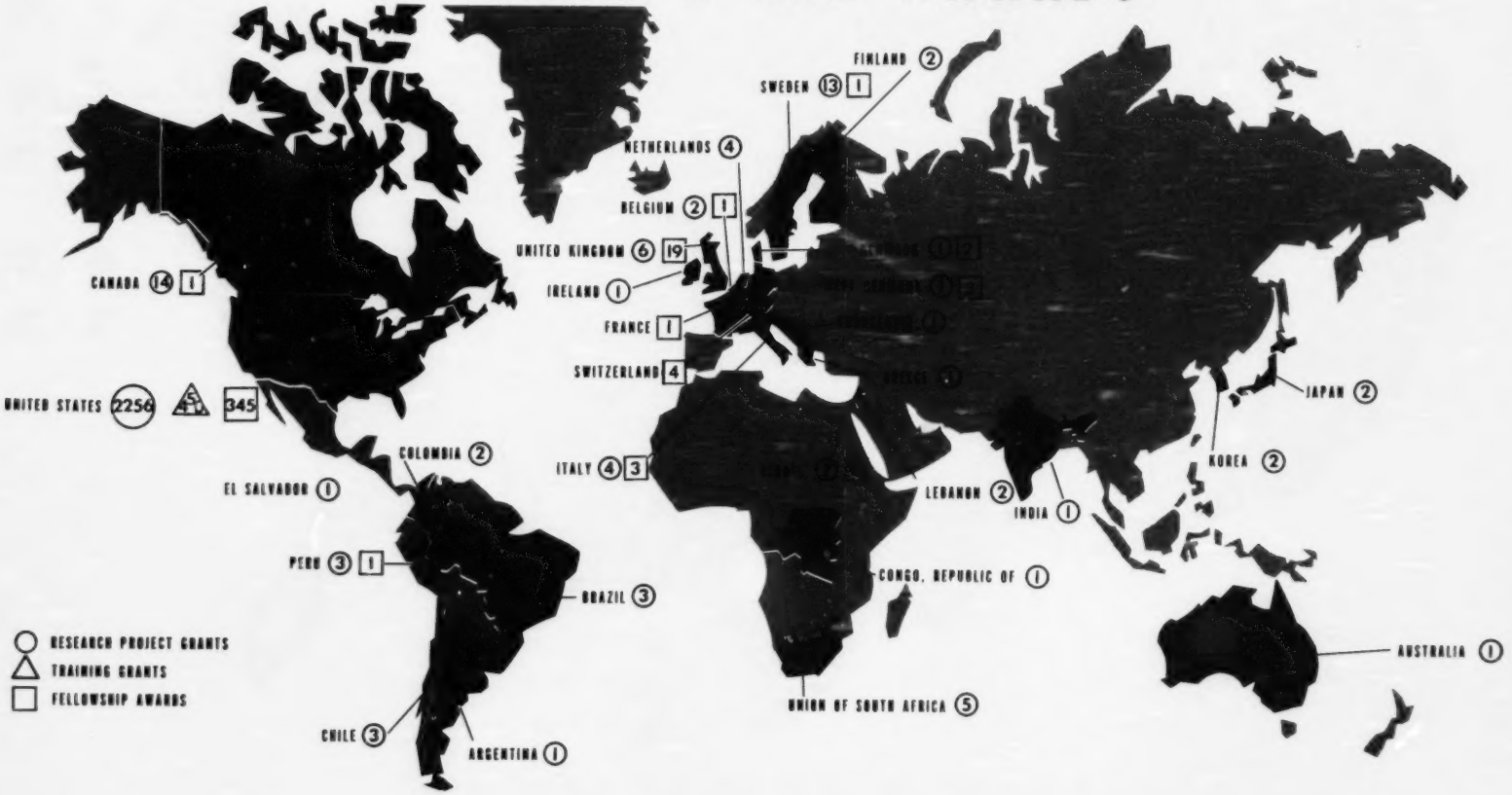

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